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ORIGINAL ARTICLES.

CONCUSSION OF THE SPINE IN ITS MEDICO-LEGAL ASPECTS.

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The legal liability of Capitalists and Corporations to be charged with claims for pecuniary damages in cases of injuries received by individuals through a claimed negligence, was established by the English Parliament in the year 1846, and is widely known as Lord Campbell's "Liability Act." Somewhat similar statutes were subsequently enacted by the State Legislatures of this country, and this responsibility on the part of carriers and employers is generally regarded as wise and tending to the proper protection of life and limb.

In Great Britain the "liability act" is the same throughout the Kingdom, but in the United States it varies somewhat in different States, especially in the amount of damages that can be claimed. In Michigan the limit of a claim is fixed at $5,000; in New York it is $10,000; in Mississippi it is such compensation as shall be deemed fair and just in reference to the injury sustained by the plaintiff. In Tennessee it includes mental and physical suffering, loss of time, necessary expenses of the deceased and damages to the beneficiary, but in Pennsylvania, since the adoption of the new Constitution, there is no limit. In one case, in Philadelphia, the loss of a leg by a newsboy on a passenger railway was assessed by a jury at $18,000; appealed to the Supreme Court, a new trial was ordered and a verdict for $20,000 given, and this verdict has been paid. Another child, 8 years old, was awarded $16,000 for injuries caused by tripping over a stone left on the sidewalk by the City Corporation, and very many other cases could be cited.

So generally is this liability for injury caused by negligence, admitted, that most corporations or employers do not hesitate at a prompt settlement of a just and reasonable claim, being influenced thereto not only by a proper regard for the suffering induced, but also as an acknowledgment of "the Majesty of the Law," it being now a well-settled principle "that they are liable for past and future physical and mental suffering, together with the loss of earning power where the consequences are such as in the ordinary course of nature may be reasonably expected to ensue."[1]

It is, therefore, not unusual for conductors, foremen, or other servants of corporations, to be instructed in the event of injuries received, to do all that is possible to ameliorate the sufferer's condition. Many companies have also surgeons regularly employed to render immediate professional attendance.

A recent example of the disposition of a corporation to promptly relieve suffering and settle a just pecuniary demand for injuries received in transit, is shown by the action of the Lehigh Valley Railroad, of Pennsylvania, where, after an accident to an excursion train at "Mud Run," in October 30, 1888, in which 63 persons were killed and over 80 others wounded, the company made a prompt and amicable settlement with most of the claimants, at a cost of over $150,000, though the Coroner's Jury, after a rigorous examination of the case, failed to report any want of care or proper vigilance on the part of those in charge of the train.

Under the "liability law" a refusal to pay what may be regarded as a doubtful or extravagant demand, usually carries the claim into Court and confides it to the judgment of a not over-intelligent jury, who often appear to have an inate prejudice against all corporations or capitalists. In these cases the medical testimony as to the nature and probable result of the injury claimed to have been received, becomes often the turning point on which a just award can be given. The medical expert then, who correctly appreciates his responsible position, should keep himself thoroughly abreast with the progress of science and endeavor to exercise such judicial power as will enable him to hold the scales of justice so level that the preponderance of the medical facts once established, may correctly in-

[1] *Patterson*, "Railway Accident Law," Philadelphia, 1886.

cline the balance to the right side and lead a jury to a true and impartial verdict for that side to which it properly turns.

As many corporations have surgeons regularly engaged to serve them in these accidents, it is desirable that the correct position of such experts should be clearly defined, and the following judicial opinion on the "relation of scientific experts to the administration of the law," has recently been so well expressed by a Judge of the New York Supreme Court[2] (in regard to these duties and relations), that I repeat them in a condensed form. "In an action for damage," says Judge Willard Bartlett, "arising from accidents on railroads, the respective parties are often assisted by Surgeons, who testify to the nature, extent and consequences of the plaintiff's injury, and also often advise counsel as to the conduct of the surgical part of the case. A wise doctor should, however, take care not to act in both capacities. If he testify, he should not act as assistant counsel, and if he acts as assistant counsel he should keep off the witness stand, because he will naturally become prejudiced in favor of the party in whose service he is acting, and the jury will regard such a witness as prejudiced and his testimony as that of a partisan, thus materially detracting from the force and effect of his evidence. The attitude of the physician called as an expert, should be as nearly as possible one of entire impartiality as between the litigants." Judge Bartlett also says, "I have every reason to believe that cases are not unknown in which the plaintiff's counsel have said to a physician, 'I think my client's injuries are serious. Go and see him for me. If you find that he is not seriously hurt, I shall not expect you to charge me anything for making the examination, but if you conclude that his injuries are incurable, I will call you as a witness and pay you handsomely.' As this is manifestly incorrect, no such proposition would be accepted by a really honorable professional man of high character."

Unfortunately for justice, the medical testimony is often so conflicting that neither Judge nor Jury can properly estimate it. This diversity of opinion is sometimes due to the want of a proper study of a case, or, the varied experience and moral tone of the expert (and his views of right and duty between man and man), as well as to the fact that the science of medicine being always progressive, there is no fixed point on which an expert's opinion can be securely based, and *Page* has well said,[3] "there must ever be differences of opinion in matters so difficult as the investigation of disease, but it is wholly possible to be impartial," whilst *Erichsen* says: (2) "Conflicts of opinion on certain points are creditable to the independence of thought and the individual self-reliance that characterizes professional opinion."

The progress of microscopical, physiological or pathological studies of tissues, especially of the nervous system and the regional localization of the functions of the brain and Spinal Cord, which are peculiarly liable either directly or indirectly to be affected by these injuries, also tends to show that the professional opinions held twenty years since are now in many points incorrect and unreliable and those of *Mr. Erichsen* on "Railway Injuries and Concussion of the Spine," once often quoted, are mistrusted by many, who deny the correctness of his terms and object to his combination of different injuries under the one title of "Concussion of the Spine."

As every period of Court in our large cities presents one or more claims for personal injury, in which the results of concussion of the spine are often presented in an exaggerated form by Counsel (in what has been well designated as "Litigation Symptoms") to cover or sustain claims that could not otherwise be established as of sufficient magnitude to justify punative or exemplary damages, it becomes important to settle, if possible, whether the so-called "Concussion of the Spine," "Railway Spine," or "Railway Brain," can exist, and if so, whether the so-called "Railway Spine" presents a special train of symptoms differing in any point from those induced by other forces than railway collision, and although many local societies and individuals have for years investigated these cases and their results, I desire now to present the question for the discussion of this Section in order to elicit a wide expression of the sentiments of those who here represent the surgical skill of the whole United States.

It is unfortunate that the consideration of the subject of "Concussion of the Spine" should be so much handicapped by the legal aspect given to it in the cases presented in claims in court; these cases frequently offering less marked symptoms than those met with in hospitals or private life where there is no prospect of the sufferer receiving an award from a jury. Formerly such claims could not be presented by *employés* and suits by them were rare. Thus prior to 1871 the German railroads were not liable for injury to their employés and the latter, being anxious to keep their places and gain their living, managed by an energetic effort of the will, to overcome and control their nervous condition; but as soon as the laws of Germany made corporations liable to their employés, the number of suits instituted from 1871 to 1876, on one railroad only, was at least nine times larger than before. Thus in fifteen derailments before 1871 there were but two injuries leading to claims for disability, whilst subse-

[2] *Judge Willard Bartlett* at the 61st Meeting of the New York Society of Medical Jurisprudence and State Medicine. New York, March 14th. (From the Philadelphia Evening Telegraph, March 15, 1889.)

[3] Injuries of the Spine and Spinal Cord without Apparent Mechanical Lesion and Nervous Shock, by *Herbert W. Page*. Second Edition, London, 1885.

quently to 1871 seven derailments occasioned eighteen lawsuits.[4]

In all suits for damages for concussion of the spine it should be recollected that *fraud* on the part of a claimant is quite a common item in the legal investigation of this injury, and thus *Page* reports[5] "234 cases, in a large majority of which there was either fraud or an exaggerated claim, as proved by subsequent history. *Hodges* reports,[6] that "in 21 cases where so-called symptoms of concussion of the spine were alleged to be present and were under his personal care, 10 are believed to have been proved deceptions; whilst in 6 a diagnosis as to deception was doubtful. Of 28 similar cases reported by *Rigler*, 7 were found to be simulated and in 13 the diagnosis in regard to fraud was doubtful. Of these 49 cases, 36, or three-fourths of the whole number, were really or probably deceptions." *Hodges* also cites[7] the following cases illustrative of fraudulent claims and unjust awards by juries.

"In 1872 the Metropolitan Railroad, of Boston, Mass., was mulcted by a jury in a sum of $10,000 in the case of a man whose detailed symptoms satisfied them that he was utterly enfeebled in body and wholly unable to earn his own living. At the close of the trial the plaintiff celebrated his victory by becoming uproariously drunk, and it required the united strengh of three policemen to take him to the Station House. In another suit in which there was a claim of impotency resulting from the injury, the jury expressed their sympathy by a verdict of $18,000, yet not long afterwards the man was convicted of bastardy."

Judge Wilson, of the Court of Common Pleas, Philadelphia, also says,[8] "I have in my mind a case where a very badly injured person was *substituted* at the trial and large damages obtained, whilst the real plaintiff was not injured at all."

The following case in my own practice illustrates an exaggerated claim and the liability of a surgeon to be deceived, either by a malingerer or hysterical man, when he places faith in the subjective symptoms presented by the claimant and apparently seconded by circumstances.

Case.—W., age 35 years, married, in full health at the time of the accident, claimed injuries from colliding trains at Havre de Grace, P.W.& B. road, on June 21, 1887. On Sept. 14, 1887, about three months subsequently, he exhibited three scars, one deep in the forehead and left eye-brow and a deep scar on the left of the upper lip, which he stated were the result of blows. He also exhibited a superficial scar from a wound on the inside of the right knee, not penetrating the joint; the patella bursa of this knee was also swollen, and he claimed to have been struck in the back, receiving a dark bruise that extended from the top of the shoulder to near the right hip. Of this bruise there was, on September 14th, no evidence, but there was apparent nervous disturbance, his right arm seeming to be paralyzed in motion and sensation, though his grip was fair. His memory, he said, was enfeebled, and he denied knowing what he had eaten for breakfast on the day of my examination. He also reported having been insensible for nearly four hours after the blow; that he was taken by train to Washington, D. C., and treated there; but that subsequently he was well enough to travel to Maine to escape the heat of the summer, and was improved by the trip. After full consultation with his family physician (Dr. Mecray, of Camden, N. J.), I reported to the railroad company that he had received the above injuries, but that the permanent disability claimed was not sustained by the evidence, as he was then apparently recovering. This opinion not being satisfactory to the plaintiff's lawyer, I was again requested to make a survey and report, on September 22, 1887. After a second examination and consultation with Dr. Mecray, I reported a slight improvement in the power and sensation of his limbs, as he now walked downstairs to his parlor and walked there with slight assistance, dragging his right foot a little and with his right arm drooping. His mind was also clear and he recalled events during his stay in Washington, D. C. I therefore gave an opinion, renewing my former statement, and mentioned the benefit apparent from his physician's treatment; that the patient complained of the tediousness of his confinement and was anxious to return to work, and that his doing so would probably advance his recovery.

Two months after this (November 11, 1887), Dr. Mecray wrote me:

"You will remember on your second visit to Mr. W. we were both inclined to give a favorable prognosis, as he was then able to walk about the house, to take moderate exercise, and was free from suffering, except from neuralgia of the left side of his head. Since then there has been a marked increase in the unfavorable symptoms." (The settlement of his extravagant claim for damages, $15,000, was now becoming doubtful, the claim being for permanent disability.) "The paralysis of the right side," said Dr. Mecray, "has much increased, the right arm is entirely helpless, with the exception of a slight grip of the hand. The power of the right leg is totally gone, and there are no reflexes whatever. The urine dribbles from the bladder, the bowels are constipated, though under his control; vision in the left eye and hearing in the left ear are now much impaired; in fact I look upon his case as one of '*progressive and permanent paralysis*,' the result of pressure upon his spinal cord, possibly a breaking down of some of its tissues. His memory, I think, is

[4] *R. M. Hodges*, M.D., Boston Medical and Surgical Journal, April 14th to 21st, 1881, page 363.
[5] Op. citat. Appendix, p. 296.
[6] Op. citat., p. 363.
[7] Op. citat., p. 364.
[8] Philadelphia Daily Times, June 7, 1889.

slightly improved. He is confined to his bed and I fear will end his days there. Dr. D. Hayes Agnew, of Philadelphia, has seen him with me and concurs in my opinion. If you have any suggestions I will be pleased to hear from you." [*Signed*, A. M. MECRAY.]

On November 12, 1887, I again visited Mr. W., and had a third consultation with his attending physician, reporting to the company "that since my former visit from some unexplained cause Mr. W. had greatly deteriorated in health. For some weeks he reported himself unable to leave his bed for any purpose and is now apparently suffering, as his physician states, from "progressive paralysis." He has no motion in either arm, except in his fingers, nor is there motion in the lower right limb. Sensation on the right side is nearly destroyed, he giving no shrinking from the puncture of the skin by a pin thrust in till it brought blood. The left limbs are sensitive. His bladder is partially paralyzed; his urine dribbles from him, and he uses a bed-pan to evacuate his bowels, being unable to rise. He is very tremulous and nervous, with depressed circulation and more mental aberration." With this report I forwarded to the company the suggestion of delay in the settlement of the claim as the patient's condition, though then unfavorable, might be improved by time. Whilst giving much weight to the opinion of his physician, who saw him daily, I was yet unable satisfactorily to account for the deterioration in his condition, the respectability of his domestic surroundings and his own standing precluding the idea of malingering. The possibility of hysteria, as claimed by Charcot in such cases did not occur to me at this time. With this evidence from his medical attendants, his claim was abated and compromised by the company on January 19, 1888, for $8,500. Six months subsequent to this, being doubtful of the result of his case, and desirous of satisfying myself of his ultimate condition, I wrote to Dr. Mecray asking his report to date, "for the cause of science," and on the 11th day of April, 1889, was informed by him that on *the day after the payment of the claim* Mr. W. arose from his bed, travelled to Washington, and in a a few weeks was able to attend to his usual avocations. Was this a case of successful malingering, or was it paralysis from hysteria? It certainly was not, as supposed by the surgeons, "progressive paralysis;" though closely resembling it.

Admitting the liability of a surgeon to be misled in his Diagnosis and Prognosis of cases claiming to be the result of spinal injuries, it may be asked, 1st. Can any force be so applied as to produce a concussion of the spinal cord? 2d. How are the normal functions of the cord disturbed by such injury? 3d. What pathological changes in the cord result from its concussion?

1. Can any force be so applied as to produce concussion of the spinal cord and its nerves? Concussion of the spinal cord from any violence sufficient to disturb its functions, whether by falls, blows on the back, or shaking and collision or derailment of cars, must be admitted as *possible*, as it is now demonstrated by post-mortem examination; but the violence must be greater than that sometimes created in coupling a locomotive to a train, claims for which I have frequently known to be made.

2. How are the normal functions of the cord disturbed by such injuries? Disturbance of the normal functions of the cord, or the symptoms of its concussion, can be recognized by evidences indicating a modification of normal cessation or motion in varied degrees as shown through the peripheral nerves. H. Fischer has recently suggested that the condition known to surgeons as "*shock*" is a traumatic reflex paralysis of the vascular nerves, the "*concussion of the brain*" being simply a shock localized in the brain, a traumatic reflex paralysis of the cerebral vessels, and *V. Schole* applies this view directly to "concussion of the spinal cord." *Erb*, however, regards the symptoms of concussion of the cord as due to "molecular disturbance, and thinks this is the chief element in its concussion."[9]

Reference to the normal action of the cord best illustrates these symptoms.

According to *Erb*[10] "all impressions made in any way on the peripheral nerves are conducted to the posterior or anterior roots of the spinal nerves and pass thence into the lateral columns of the cord and thence to the brain, as touch, temperature, tickling, etc. The sensation of *pain* is conducted exclusively by the gray substance of the cord. The *sensory* impressions decussate in the cord and medulla oblongata and *voluntary* movements pass *from* the brain to the cord, through the decussation at the pyramids, medulla oblongata and pons varolii."

The seat of the coördination of *movement* is not settled, but is supposed to lie only in the brain, the cord only transmitting the coördinate impulse to the muscles.

The centre of *vaso-motor innervation* lies in the cord and medulla, and Charcot says, "the nutrition of the peripheral nerves, muscles, bones, joints, skin, hair, nails, etc., is dependent on the action of the spinal cord," and of course these are impaired by its injury.

The disturbance of the function of the cord by injury or disease will, therefore, be noted (*a*) in disturbance of the normal *sensibility*, as anæsthesia, hyperæsthesia, paræsthesia; or abnormal sensations, as pain, either lancinating or neuralgic; (*b*) in disturbance of *motility* as shown in weakness or paralysis, or ataxia; or by increased mo-

[9] Volkman's Sammlung Klinische Vörtrager, Nos. 10 and 27, as quoted by Erb.

[10] Erb. Diseases of the Spinal Cord, p. 352, and from this monograph much that I have stated is condensed.

tility, as in spasms or twitching; (*c*) vaso-motor disturbance will be shown, in hyperæmia, increased redness with elevation of temperature and modified sensation, as in the old "rubor, dolor, calor" of inflammation, accompanied often by modified nutrition of the tissue affected.

3. What pathological changes in the cord are found as due to its injury or disease? Pathological changes may be noted first, in the disordered action of the blood-vessels concerned in the nutrition of the membranes and of the cord as (*a*), congestion or hyperæmia; hæmorrhages or effused blood; inflammation of the membranes or of the component cells of the spinal cord; (*b*), in anæmia; or we may have myelitis followed by softening or sclerosis; or (*c*), there may be changes due to malignant diseases or tumors, omitting all reference to changes from mechanical action, as wounds, fractures, or luxations of the bones forming the spinal canal.

The disturbed function of a spinal cord may, however, also be "due to a diseased or neuropathic disposition, either inherited or acquired, as by sexual excesses, which are common; exposure to cold and wet; intoxication; syphilis; excessive exertion and overtaxed muscle; acute diseases, as the exanthemata; fevers and pneumonia," so that in studying the results claimed as due to a concussion of the spine from injury, and especially in litigation cases for damages, too much care cannot be exercised in obtaining a full and correct history of the claimant *before* the accident and in a careful analysis of the subjective symptoms, so as to prove that the injury did not create them. If the disturbance is *functional* it can be cured and there may be no permanent disability. When a claimant is impecunious and seeks to repair his fortunes by a demand on a corporation or capitalist, the expert should carefully eliminate all symptoms not evidently free from the disorders of the spinal cord due to preëxisting diseased conditions, or show to what extent the accident was connected with them.

As Neurasthenia or *functional* disorder of the cord can produce all the symptoms often ascribed to violence, may we not doubt the correctness of Erichsen's opinion[11] in ascribing such symptoms to "concussion of the spine." Such doubts are daily becoming more numerous, and the varied nervous symptoms alluded to by him are assigned by more modern authorities to other causes. Thus Charcot says:[12] "The obstinate symptoms resulting from railway injuries are *hysteria* (or hysterical) and nothing else," and hysteria, according to Dr. Ozeretokofski, of Moscow, "is by no means an exceptional occurrence in men, presenting the same diversities in them that it does among women;" he having studied no less than thirty-eight cases in the Moscow Military Hospital.[13]

The correctness of the opinion that concussion of the spine is common and creates special symptoms, has also been doubted by others; thus *Bramwell* says:[14] "Whilst I am not prepared to deny the occurrence of simple concussion of the spine, I am disposed to doubt whether organic disease can or does result from it. Indeed, everything seems to show that when disease of the cord results from external violence, the disturbance of its functions depends, from the first, on definite and distinct alterations of structure; and there is good reason for supposing, that undoubted and severe disturbance of the spinal function *rarely* results from violence; the ordinary type of chronic disease of the spinal cord very rarely following railway concussion. Nothing in the whole range of inquiry stands out more prominently than the fact that the lesions which become the subject of medico-legal inquiry, are met with only in a *few* isolated cases."

Page says,[15] "In fact, serious and undoubted derangement of the functions of the spinal cord as the result of simple concussion of the spine, is probably rare; whilst cases in which the symptoms of spinal shock do not appear for weeks or months after an accident, are *exceedingly* rare." He also remarks, "that there is no evidence that the victims of railway collisions, numbering thousands, have afforded a larger proportion of the degenerative conditions of the cord which have for years engaged the searching attention of pathologists, than those members of the community who have not suffered the same influences. There is no evidence that they have." *Bramwell*[16] says, "I think the chronic diseases of the cord claimed to be developed by railway collisions are infinnitely more *rare* than has hitherto been supposed." *Reynolds* describes[17] "cases in which a patient has no intention to deceive, but really believes that he is the victim of serious organic disease. He is usually of a highly nervous temperament and often very active, mentally. His fixed belief *induces* functional disturbances, as twitching, muscular pain, excitable action of the heart, palpitation, exhaustion after slight exercise, and he becomes impressed with the idea that he is unable to do anything; that he is paralyzed and that he cannot sleep, awaking unrefreshed." Such cases I have often seen.

Reynolds' opinion and my own corresponds with that of Charcot and also of Grasset, who has described such cases[18] "as hystero-traumatism or nervous affections sometimes resulting from wounds." *Knapp* says,[19] "Whether there is a

[11] On the Concussion of the Spine, Nervous Shock, etc. By John Eric Erichsen. Revised Edition. New York, 1886.
[12] Léçons sur les maladies du systeme nerveux, par Charcot. Paris.
[13] The Lancet, February 16, 1889, as quoted in N. Y. Med. Record, May 4, 1889, p. 504.
[14] Bramwell on Injuries of the Spinal Cord, p. 305, 12, 13, 19.
[15] Op. citat. p. 107.
[16] Op. citat.
[17] Quoted in Bramwell.
[18] Léçons sur l'Hystero-traumatisme par Grasset. Paris, 1889.
[19] Nervous Affections following Injury. By Philip Coombs Knapp, p. 5. Boston, 1888.

true concussion of the spinal cord is still a matter of doubt. I mean a paraplegia following injury, where the cord has sustained no coarse mechanical lesion, where molecular changes in its finer nerve elements have occurred, giving rise to immediate and complete functional paralysis."

Although this evidence shows doubts as to the results often claimed as those of spinal concussion, it has been recently demonstrated that the spinal cord may be occasionally so shaken as to ultimately induce molecular changes in its structure without any injury to the canal, this being proved by post-mortem examination and the investigation of the minute structure of the cord under coloring, hardening and microscopical sections; but such cases are certainly very rare.

As muscular nutrition is dependent on a proper nerve supply, its deficiency will indicate such changes in the cord as atrophy, softening, etc., and Gower in his recent work says,[20] "Any destruction of the nerve cells will also cause degeneration of the motor fibres proceeding from those cells, with wasting of the muscles to which these motor fibres proceed." Hence, injury to the spinal cord should always be indicated by muscular atrophy in a more or less marked degree, and when no change is noted in the nutrition of the muscles, doubt may well exist in the mind of the expert as to there having been any concussion of the spinal cord.

A demonstration of the muscular development and power of a claimant may then well be made to a jury, in explanation of the condition of the plaintiff's nerves claimed to be impaired by the concussion. *Gower* also states that "Visceral control especially of the bladder and rectum (though the latter is sometimes under the immediate control of the branches of the sympathetic nerve), is also related to centres in the spinal cord, and although the action of the bladder and rectum can to some extent be controlled by the will of the patient, yet the latter cannot control the reflex processes when the volitional path in the cord is interrupted above the lumbar centre."

When the damage to the cord also involves the sensory tract, the claimant may be unconscious of the state of his bladder and the urine will dribble away. Pain in the spine, which is often spoken of by a patient, is no evidence of concussion of the cord, as it is occasionally present in organic disease of the cord, and more frequently in cases of disease of the meninges or bones.

Page regards this pain in the back, so often claimed as a symptom of concussion of the cord, as being due to the strain of the muscles or ligaments of the spinal articulations, and not necessarily indicative of cord injury. *Gower* says "softening of the cord is common; derangement of its functions few and rare. A severe concussion of the cord may cause instant and grave damage usually by hæmorrhage, or it may cause no immediate effect and the symptoms appear at the end of a few days and progress rapidly or slowly." It is therefore apparent that in such cases, symptoms of injury to the cord should be found *soon* after the accident and not (as is sometimes claimed by lawyers prosecuting a claim) several months after the occurrence.

Hodges states: "It is characteristic of concussion of the spinal cord, that its phenomena are *immediate* though the recognition of them may not be equally prompt."

The development of an injury from spinal concussion should therefore be specially studied in reference to the *time* after the accident when the claimant first begins to complain. This time should be a few hours or days after the injury, and not weeks subsequently, when his mind, by dwelling on the accident and being posted as to the symptoms of successful awards made in other claims, has induced that emotional, hysterical or decidedly fraudulent condition of the body and mind which constitutes malingering.

POST-MORTEM EXAMINATIONS IN CONCUSSION OF THE SPINE.

The following cases illustrate the pathological conditions noted in well developed concussions of the spine, and prove that such an injury though rare, is possible:

In the *Canadian Medical and Surgical Journal* for Oct., 1884, p. 156, *Dr. J. Campbell*, of Seaforth, Ontario, states, "That serious and even fatal effects arising from injuries of the spinal cord even when it has not received any direct injury, is proved by a case reported by *Dr. Edmunds* in the current number (October, 1884) of the journal "*Brain*," where a soldier struck in the back by a bullet which entered three inches from the spine, immediately fell, was carried off the field, and was found to have lost complete control over both of his lower extremities, with paralysis of the bladder and rectum. Cystitis and a bed-sore over the sacrum supervened and he died five months after the injury. The autopsy showed that there was no fracture of the vertebræ; that the theca vertebralis was intact; but the spinal cord was found much atrophied and softened about the level of the wound. On hardening the cord in Müller's fluid, universal myelitis was noted, with softening for about two inches opposite the wound; this gradually passed downwards into sclerosis of the lateral and anterior pyramidal tracts and upwards with sclerosis of the posterior median columns. There was no indication of hæmorrhage, either internally or externally in the substance of the cord, and its surface was uninjured."[21]

A marked illustration of a similar pathological condition showing that degenerative changes in the cord do sometimes, though rarely, follow con-

[20] Manual of the Diseases of the Nervous System. By W. R. Gower, M.D. American Edition. Philadelphia, 1888, p. 130 *et supra*.

cussion, has been kindly furnished me by my friend Dr. Arthur V. Meigs, of Philadelphia, one of the Attending Physicians of the Pennsylvania Hospital. As the details of the case, with its microscopical illustrations, have not yet been published by Dr. Meigs, I give his account of it from a letter recently sent me :[22]

A sailor, 35 years of age, was admitted into the Surgical Wards of the Pennsylvania Hospital August 20, 1888, and died September 15 of the same year.

History.—During a storm ten days before his admission to the Hospital, he was struck by a wave and dashed against the bulwarks, striking the back of his head and neck against the rail. On being picked up it was at *once* found that he had lost all sensation of power and motion from the clavicles downwards, and that he had retention of urine. When admitted to the Pennsylvania Hospital (ten days after the accident) he had a large bed-sore on his back. His temperature varied from 100° to 103⅘°. Examination of his urine showed nothing abnormal, and there was no violence or signs of fracture or luxation of the vertebræ. He was treated on a water-bed; a poultice was applied to his chest because sonorous râles were heard on examination of his lungs, and iodide of potash was administered. The râles increased in his chest until the lungs were full and he became unable to expel the secretion; abdominal tympany supervened and he became comatose, dying apparently of heart failure. The autopsy showed that there was neither luxation nor fracture of the spine, and though the spinal cord was carefully examined at various points by the unaided eye, no sign of its diseased condition was noticed. The cord was then placed in Müller's liquid[23] for hardening and microscopical examination. After having been thus preserved in the fluid for a few weeks, the gross evidences of disease became very manifest and the histological appearances still more so; the lower part of the cervical swelling being almost disintegrated, there being at this point an almost complete transverse myelitis, the greater part of the tissue consisting of the so-called granule-cells with swollen and extended fibres; corpora amylacea and large nucleated cells that stained very red with carmine; whilst there was much space apparently empty, which had been probably filled with albuminoid material or liquid, for if this had not been the case the tissue would have collapsed instead of hardening in Müller's fluid. Above this region there was marked secondary degeneration, the section being taken only a short distance above the myelitis, though this was general in a slight degree throughout this portion of the cord. But in a part of the posterior columns, it amounted to a complete destruction of the nerve fibres. Below the region of the myelitis there was descending degeneration of the lateral pyramidal tracts, this extending downwards into the lumbar region. These areas of degeneration were very evident to the naked eye after the cord had been in Müller's fluid, the degenerated part of the white substance of the cord having taken a yellow color, exactly similar in shade to that taken by the gray matter, while the portions of the white substance that remained healthy were of a greenish hue." My examination of some of the sections fully confirmed Dr. Meigs' description of the pathological changes.

That diseased molecular changes in the structure of the spinal cord have been occasionally seen without apparent mechanical injury, is shown in the following case, reported[24] by Dr. Wm. Hunt, of Philadelphia, "where a gentleman who traveled very frequently in railroad-cars, but never received any injuries as the cause of his disease, began to complain of pain in the posterior root of the neck. Paralysis, at first of the upper and subsequently of the lower extremities, was developed, and within a year he died, and the autopsy revealed spinal meningitis, with softening and destruction of the cord to the extent of 2½ inches in its brachial enlargement. As there was no other cause known, it seems as if 2½ inches of the spinal cord had been softened and atrophied without any mechanical cause;" yet if this man had received even a slight jar and presented such symptoms, his autopsy might have indicated "Concussion of the Spinal Cord." There are some persons who believe it possible to impair the functions of the cord, and even induce paralysis, from the jars created in the spine by constant travel; but if this were true there ought to be very many instances of it found in commercial travellers, none of whom are known to thus suffer. Nor is it true of such men as engine drivers on express trains, who are more exposed to jars on a locomotive than would be the case in a passenger car, and I am assured by an experienced General Superintendent of one of our largest railroads, that engine drivers do *not* show any evidence of concussion of the spinal cord after years of service on express trains. Constant travel as the cause of spinal degeneration is, therefore, not proven.

CONCLUSIONS.

1. Concussion of the spinal cord is no longer a matter of doubt, but may sometime occur as the result of various forms of violence, their being nothing peculiar in the application of the force to the body, as the result of derailment or collision of railroad trains.

[21] I am indebted to *Dr. Campbell* for a written account of this as I did not have access to the printed report in the Journal. The report was made to the Medical Association of Ontario and printed in their Transactions.

[22] MS. dated April 26, 1889.

[23] Müller's liquid consists of 2 to 2.5 parts of potassium bi-chromate, 1 part of sodium sulphate, and 100 parts of water.

[24] "System of Medicine," by Pepper. Vol. 5, page 915, Philadelphia, 1886.

2. The pathological changes noted in the molecular structure of the cord as the result of shaking, jarring, or so-called concussion of the cord, when attended by paralytic symptoms, may be due to a hæmorrhagic effusion, or be shown post-mortem, in softening and localized or limited atrophy. In cases due to hæmorrhage, the symptoms may be improved by judicious treatment, and permanent disability prevented.

3. The possibility of preëxisting neurasthenia or hysteria or fraud on the part of a claimant, should be carefully noted in forming a *diagnosis* in these cases.

4. As the question of permanent disability justifying exemplary damages is frequently raised in claims of the kind alluded to, it should be recollected in forming a *prognosis* that numerous cases are reported of recovery or marked improvement in a few weeks, and one in three years even, after the occurrence of paralysis.[25]

5. No physician should go into court and swear that a plaintiff has had a concussion of the spinal cord, or of its nerves, unless he has proved the disturbance of the normal functions of the cord, as shown in sensation or motion or both, and that the symptoms appeared *soon* after the injury.

THE MEDICO-LEGAL ASPECT OF CONCUSSION OF THE SPINE.

Read in the Section of Surgery and Anatomy, at the Fortieth Annual Meeting of the American Medical Association, June 25, 1889.

BY HERBERT JUDD, M.D.,
OF GALESBURG, ILL.

The facts stated in this paper are drawn solely from my own experience as a surgeon—being cases resulting from or suggested to the patient by accidents; cases in which all objective signs of injury, if any ever existed, had passed away; cases in which the question of supposed or alleged concussion of the spine were under observation from a medico-legal aspect; cases in which compensation for personal injury was sought. In bringing this paper to your notice I do so with a feeling somewhat of duty. It is plainly evident to all thinking, practical surgeons that the question of the concussion of the spinal cord, if such a disease can exist, has become a matter of *business* interest—a business transaction in which the extent of the disease or injury is to be determined in the currency of the country. I say this, because of my experience during the last twenty years, I have found but two cases of alleged concussion of the spinal cord, except those resulting from accidents caused by actual or constructive negligence of others, and where, if an injury existed, there was an opportunity to recover compensation in money. This is the history of all, or nearly all, the reported cases, and, as stated by Erichsen, "the consideration of these cases from a medico-legal point of view is a matter of the greatest importance by reason of the difficulties with which they are surrounded and the obscurity in which they are enveloped."

It is demanded by the honest business interests of the country, by cities, transportation, mining and manufacturing companies and by all employers of laborers, that the subject of spinal concussion receive the most thorough attention at our hands. If we do not expose the cheats and frauds, and protect the deserving claimant, who can do so? That cities and corporations are robbed of vast sums of money yearly by malingerers, aided by unscrupulous legal talent, and by ignorant or dishonest surgeons we all know to be true. This subject has reached this disagreeable status. A person can claim to be injured in a collision of trains, or by other accident, no objective symptoms or signs can be discovered, nor upon close examination found. Nevertheless, such person never fails to find abundant medical testimony, and the assistance of friends which with the required legal talent, will be sufficient to successfully prosecute a suit. Especially is this true when the defendant is a corporation. Such cases can be and are based upon, and carried to the end upon only a few vague subjective symptoms, every one of which depends alone upon the word of the claimant who seeks damages.

I make these statements, not as a partisan, not as a corporation surgeon, but assert them as truths determined by my own personal experiences in cases in which I have been interested as the attending physician from the choice of the patient, in some of which the patient hoped to secure my aid in collecting damages. In some of these cases I have been sorely tried, and, I confess, for a time deceived and misled, in trying to determine whether or not any injury to the spine existed. Some of these patients, where lapse of time had proved conclusively that they had received no injury, had always been considered good neighbors, fair citizens and reasonably honest men. How, then, can we account for such cases? Until the statutes of the various States were enacted, favorable to such claimants, and the laws of fellow servants practically abrogated, symptoms were perhaps seldom deliberately and purposely manufactured, but we all know that patients are apt to greatly exaggerate their complaints. This is no doubt done in many cases unconsciously. In cases of this kind, surgeons and physicians are very liable to be deceived and imposed upon, and made the tools of designing,

[25] Injuries to the Spine and Spinal Cord, by *Herbert W. Page*, F.R.C.S. Second Edition. London, 1885, p. 203, who says: "Happily the record of cases which we have been able to collect, is conclusive that recovery is usually very complete and the patient able to resume his occupation and carry on his business as well as he did before being injured."

See also, *Dana*, New York Medical Record, November 21, 1884, page 617.

unscrupulous men, if not well schooled in reading character and determining motives. Definite opinions of imposture in many cases must be non-medical. We may reasonably suspect imposture where there is no organic disease, and where there is obvious motive or money consideration for deception. We might perhaps remain quiet and permit our patients and neighbors to rob corporations on the ground that it does not concern us, just as we take no active part in enforcing the criminal laws of our States for the reason that we are not charged with that duty. But when we find such an increase in imaginary diseases, and find members of our own profession deceived, or deliberately aiding these malingerers, it is time for us to protest as a class. But this is not all. The facility with which damages are collected from corporations is breeding a large class of dishonest persons. It is infectious; men grow more and more to disregard the obligation of an oath. The government itself is a victim; patriotism and sentiment aid. All this tends to demoralize society, and to wrong the honest claimants for damages or for pensions.

Railroad attorneys inform me that it is now their custom to take the names and address of every passenger on a train that has met with any serious accident, because their experience is that at least one-half of the passengers who receive no injury will, before claims are barred by statutes of limitation, bring suit, and claim concussion of the spinal cord. They learn that those who receive trifling injuries recover large sums, and then comes the temptation to extort money, because they ran the same risk as those who were injured, and they quiet their consciences by assuming that although uninjured the railroad company ought to be made to pay for putting them in jeopardy. In some of these cases there may have been trivial injury, and then the conscience of the patient is somewhat relieved and he finds excuse for deception, and the temptation is so great that few seem to have sufficient moral courage to resist. Many a man who had previously had no public stain upon his character has yielded to the great temptation. Can we not do something to save these men from themselves, and to save our professional brethren from temptation, and from becoming the victims of unscrupulous malingerers?

It is no pleasant task for me to bring cases before you, but in doing so I cannot be charged with being partisan, or with having any desire to prevent any honest claimant from securing just and full compensation for all actual injuries sustained through the fault or misconduct of another. Several years ago I withdrew from all connection with the railroad company I had for some years been connected with.

The knowledge I have sought and which I think I have gained in connection with cases of alleged concussion of the spinal cord and other cases of malingering, forbids me from remaining silent, especially when I see that the tendency of such pretended injuries or disease is to lower the standard of the medical profession, and to cause the people who see the results of these cases after the money consideration has been paid, to lose faith in the honesty and integrity, or in the skill and knowledge of physicians. I append statements of a few cases that have come under my observations; cases followed by me carefully after judgments were paid or claims settled, and in which recovery was complete in a surprisingly short space of time, without the aid of surgeons or physicians. Such cases have of recent years become so common that the medical profession is brought into ridicule, and it is not rare that intelligent men of a community assail us with the jocular information that railroad officials with no knowledge of medicine or surgery, succeed in producing speedy and permanent cures with money, where our skill and care produced no improvement in the patient.

It is said, and it is probably true, that more people are injured every year by riding in carriages and by farm work than by railroads. Yet injuries that are pure accidents, or injuries where a corporation of some character is not at fault, never result in concussion of the spinal cord. And where injuries occur through accident, for which no liability can attach, we find no malingerers.

Cases 1 and 2.—May 10, 1889, I was called to see Mr. and Mrs. C. G., aged respectively 62 and 63 years. They had been riding in a spring wagon; the horses were frightened by cars and ran away, throwing the occupants out. There were no visible wounds or fractures, but the patients were suffering from shock. I surrounded them with blankets and jugs of hot water, and after four hours of rest, sent them to their home five miles distant. These people were disciples of Hahnemann, and the next day sent for their family physician, and in a short time concussion of the spine was alleged in both cases. Damages were paid. The man is still living and in average health for one of so great an age. The woman was alive and in good health three years ago.

Case 3.—E. H. H. was walking on a sidewalk and fell into a pit eighteen inches deep, extending from a basement window. I saw him a few days afterwards. His thumb was swollen, and that was the sole objective symptom. The patient at once talked of the amount of damages he could recover, and complained of his back. This man was a hanger-on about the courts, and had some ideas as to how to proceed, and his subjective symptoms were in the line of his desire to recover a judgment. This case was properly attended by a skilled surgeon and physician, a man who stood

above reproach. Through his care and *warning* the spine recovered, although the patient's friends asserted positively that he suffered severely from concussion of the spinal cord, and other alleged doctors were called to examine the patient. The physician in charge became disgusted with the malingering and abandoned the case, and through fear of his testimony, no doubt, the concussion theory was abandoned, and the thumb grew worse. The thumb and hand were firmly bandaged, until there appeared to be permanent contraction and disfigurement. Suit was brought against the city, and good legal talent was employed, for lawyers as well as doctors can be found to work in such cases for a consideration. The city was mulcted several thousand dollars, although competent and reputable physicians testified that the sprained thumb wouid have recovered in a short time without treatment, if it had been left alone and not bound and poulticed. Within one month after the judgment was paid, the man, to the disgust of his friends, was at work on his bench as any shoemaker should be, and the recovery was complete. This case would have gone through the courts as an aristocratic case of concussion, instead of a plebian case of a sore thumb, had not the honorable physician who first attended the case stood in the way.

Case 4.—Concussion of the spine—so-called and treated by two reputable surgeons. Liability conceded by a railroad company. Damages estimated on the basis of permanent injury and the presumption that the man could never walk again. A complete book case. A large sum of money was paid, and a few days thereafter the man *walked* to the cars in the night time and left the State. The case was as follows: The claimant was an engineer. In making a rapid switch a rail was broken, and the engine left the track and tipped over. The fireman was killed and the engineer thrown out and stunned and bruised. His family physician was called, and he in turn called a surgeon, who justly ranks high. There were no objective symptoms. The man was apparently scared. There had been no shock. The case gradually grew to be a case of concussion of the spine, a "book case." In justice to my esteemed medical brothers who attended the case, I will say, that under the circumstances, and with death resulting to the companion of the patient, other surgeons would have been likely at that date to have been deceived. I rejoice at my escape from this case, for I sadly fear that with the experience I then had I should have believed the patient's statement and symptoms related. The recovery in this case was complete, and the man last heard from, some five years after the accident, was in robust health.

Case 5.—F. P., age 18, brakeman, habits questionable, health undermined, inclined to consumption, was on top of box car in a train under way. Head end collision. P. jumped from train and fell some distance from the track; when found he lay in a depression in the ground on his back, with his back across a railroad tie. He was brought a distance of 23 miles to his home. He was met at the station on his arrival by the writer, four hours after the accident, and was carried home on a hand stretcher. When met at the station reaction was progressing naturally. He had received a great shock. Two hours after seeing the patient at the station, I again saw him, and being the attending physician of his father's family, and the residence being a short distance from my office, I saw him often. In this I made a mistake. There were no objective symptoms. The subjective symptoms were pain in the back over the dorsal vertebra. My directions in the first instance were to keep him warm and let him alone until I again called. The pain being apparently so great, I called to my assistance a very painstaking physician. We carefully examined the patient and found curvature of the spine, bold and distinct. We abandoned further examination at that time and regarded the case as hopeless. To our great surprise, however, during a later visit the same day we found reaction fully established, with no complaint of pain. We then again examined the back. The deformity of the spine was decidedly marked, but there was no tenderness upon pressure. We made no further examination for several days, and in the meantime I described to his mother the condition of the spine as we had observed it, and our fears of a serious injury and fatal result. This was my second mistake in this case. The information I communicated to the mother, to my surprise, did not greatly disturb her, and here my suspicions were aroused. I had long been her attending physician, and the patient was her son, and yet my opinion of her son's condition was received quite calmly. From this time on the curvature of the spine became in the minds of the family more pronounced, and the money question began to be considered. To protect myself and guard against an outrage being committed, and for the purpose of saving the reputation of the family I had so long attended, I procured skilled help and made a correct plaster cast of the whole back. I had seen lawyer's tracks. Secret meetings had been held in the back parlor, as was reported to me. I was quietly interviewed and informed that the case was all clear if I was all right. The whole family asserted to me that prior to the accident no deformity of the back had existed. I was in trouble, and consulted with the physician whom I had called in consultation, and we took such steps as we could to save ourselves from being either parties to a contemplated robbery, or from wronging the family that had trusted me. A brother of the patient, a bright boy, had some years before been my office boy. He was absent

from home at the time of the accident. When he returned he told me that his brother's back had been that way since he was a little fellow.

I devoted my labors after this to getting my patient out of bed and on to his feet, but he insisted upon the necessity of crutches. I could do no more; the spine grew worse; suit was brought because a fair and, in truth, a generous offer made by the railroad company was indignantly rejected. Foreign surgeons were called to examine the patient preparatory to testifying. I knew the case was one of malingering, and so informed the attorney of the railroad company. The surgeons who had no knowledge of the case, except as related to them by the patient and family, would readily have testified to the permanent injury and that the accident was the cause. When the case was set for trial I was so beset with difficulties that I was compelled to exhibit the cast of the back, and to urge that surgeons for the railroad company might make an examination. This was done. It is sufficient to say that Dr. J. Adams Allen cured the case within the half hour before Court convened. So thorough was the cure that a reasonable sum for the actual injury, less than the amount previously offered, was greedily accepted. On the evening of the same day the crutches were abandoned, and the afflicted spine was supporting the body of an intoxicated man.

This, gentlemen, is a true history of a case that occurred in a family that had my confidence and respect. It cost me many gray hairs.

Case 6.—A middle-aged man of nervous temperament, of health feeble for years, tripped and fell from a defective sidewalk. Accident happened in front of his own house. He immediately took to his bed. A reputable physician of long experience in general practice was called. The patient remained in bed—as was supposed—for some months, when suit against the City was brought, based upon permanent injury to the back, on account of spinal concussion. The case was on trial with the plaintiff in bed, unable to attend, as was alleged, when the writer and another physician were solicited by the plaintiff's attorney, who had faith in the honesty of the case, in order to further the ends of justice, to go and examine the plaintiff, and testify to his crippled condition. We found the man in bed, and evidently prepared for our coming. Not the slightest objective symptom could be found, but the subjective symptoms were perfectly in accord with all the recorded book cases. With careful effort we got the man out of bed. The imperfect walk, the peculiarity of gait and carriage of body, were just what a student would expect to find after having freshly read these cases and never before having seen one.

I am not naturally suspicious. I want to have faith in mankind, I want to be just, but there were many things which I cannot fully explain; the manner of the man, his guarded language, his suspicious glances, that caused me to suspect that we were being misled, and being entangled in the trap set by designing lawyers, or credulous and ignorant physicians. I informed the plaintiff's attorney of my suspicion, which after some tests had become a conviction, of the plaintiff's dishonesty in this case. I was nevertheless called to testify, because, as I was informed, my silence after it was known that I had made the examination, would be more damaging than my negative testimony. I testified substantially that I had no positive means of knowing or satisfying any one else that the man was simulating all his symptoms, that I had never before had cause to suspect him of dishonest practices, that there were no objective symptoms or signs of injury, that the whole case depended upon the symptoms which could be simulated, and upon the statements of the patient, and upon these alone. I was asked by the attorney for the City to answer that had the accident happened within his own dooryard, or where no one would have been liable, would the symptoms have been the same? I answered, "No, I certainly think not." This testimony was, however, "ruled out" by the Court. The surgeon who made the examination with me corroborated my opinion. I did not hear the testimony of the attending physician, but was informed that he thought it improbable that all the symptoms could be manufactured; that in all such cases the physician had to rely upon the statements of the patient, and that he could not be properly treated if symptoms stated were ignored, etc. Judgment was given in favor of the cripple, and the money paid. A few weeks afterwards I was much surprised—or would have been had I believed the man's story—to see this same plaintiff riding about the city; and about five months after the trial I ought to have been again surprised beyond belief, I suppose, to see this same man, permanently crippled from concussion of the spine, put a heavy stove into a lumber wagon. To be certain that I was not mistaken in the person I went to him and shook hands with him. He is not now a strong man, and was not before his fall on the sidewalk, but, knowing him well both before and after the fall, I can state positively that he is in better health and in better physical condition than before the accident. It is certainly very unpleasant for me to record this case. I have no personal ill will against the man. He was the victim of his cupidity, and only followed the precedent set by many other "honorable men." I was recently called to his fireside to treat a member of his family.

Case 7.—A young married man, jeweler by trade, had occasion to go hurriedly to a railroad station. Unknown to this man, as he claimed, the station platform had been partially removed for repairs. The sidewalk, which was in place, had formerly terminated in the platform. The

removal of the platform left the end of the sidewalk about 14 inches above the level ground. The man stepped off the end of the walk, and fell to the ground. This is the history of the accident given by the patient—no one else witnessed it. He got up, went into the telegraph office, sent a message and returned home. The case was brought to my knowledge some weeks afterwards by the attorney of the railroad company, who desired me to examine the man together with the doctor in charge. At my suggestion. permission was granted by the attorney for the claimant to call a third physician. I called Dr. H., an old practitioner, and a man beyond reproach professionally and otherwise. I found the history of the case as stated above, and that permanent injury was claimed; that suit had been brought in one County and that the attorney who brought the suit had abandoned the case because he believed the man dishonest in his pretenses of injury. This put us on the watch and compelled a critical examination. The desertion of one attorney did not deter the claimant, nor seriously discourage him. Lawyers are no more virtuous than physicians, and a speculative lawyer was soon found ready to take the case, and a new suit was brought in another County. The physician who had been treating the case was employed specially because of a reputation he had previously acquired as an expert witness for the claimants in spinal concussion suits. The attorneys representing both plaintiff and defendant were present. This was a mistake, and was chargeable to me. No proper or satisfactory examination could be made under the circumstances. The case presented in all its aspects the appearance of chronic disease, or permanent injury; the general appearance of the patient was bad, suggesting rheumatism. Aside from this there were no objective symptoms. I stated that if his present condition was due to the fall, he was certainly injured. He finally admitted, because it was susceptible of proof, that he had repeatedly suffered from rheumatism for some years. It did not seem possible to Dr. H. and myself that this person could be in his present condition from any injury a person could sustain from the accident related. The doctor in charge of the patient and his claim stated that it was a case of permanent injury to the back. The case came to trial, concussion of the spinal cord was the plea. It was shown by his own testimony how much he had suffered and was suffering. The doctor in charge either dishonestly or ignorantly corroborated his patient, although admitting that no medicine had been used. Some of the most candid and intelligent surgeons of the State of Illinois, all members of this Association, were called by the railroad company as witnesses. The track gone over in this case was the same old beaten path, the only road possible to travel, that is the man's own word and subjective symptoms. Book cases were rehearsed to the jury of concussion of ths spinal cord by a professor of the Physio-Medical College—formerly of Cincinnati—the pale face of the rheumatic patient, the prejudice of a jury in favor of a claimant and against a corporation, succeeded, and damages were awarded to a large sum. After payment of the judgment, the patient recovered from all trouble, except rheumatism, so rapidly as to abash and disgust the innocent jurors and sympathizing friends, and finally taunts and charges of dishonesty became so numerous that the claimant felt it safer to emigrate from the County, and the doctor, who was also a druggist, has removed, but before going, instead of pleading ignorance to the discredit of his skill as a physician, admitted that it was a little scheme to get even with a soulless corporation. The claimant had not sustained the slightest injury; indeed, it is believed by the citizens of the village that he did not even fall from the sidewalk.

I will not burden you with reference to any further cases. It would be but a repetition. You have no doubt had similar cases. I have been unfortunate, it may be, in having a number of other cases brought to my knowledge, a number in excess of what might seem usual; but I have no doubt no greater number or kind, as regards the subject of concussion of the spinal cord considered in its medico-legal aspect, than have come under the observation, in the practice of a large number of those present.

If a young man can begin life with the truth visibly laid before him, and be warned of the snares set for him, and be helped to avoid deception, some of the obstacles to his honorable fame may be removed, and his path be made easier. If the young men in the profession could realize that cheats and frauds are not rare, much good might be accomplished and less harm done.

I must certainly question if there be such a disorder or injury as concussion of the spinal cord, as some of the books tell us, or describe it. I have certainly been a hard worker after the truth in this matter, and have not exaggerated the cases I have reported, and have withheld reports of other now notorious cases of pure fraud and malingering, in which honest but credulous physicians were misled, deceived, and their reputations injured.

I trust that members of the profession more skilled with the pen than I am, more capable of expressing their ideas to others, will give the subject careful study, and give their views to the public. To learn the truth these cases must be followed and observed, not only before judgments are paid, but for months afterwards. I would be happier if I could be convinced or could convince myself that I have been mistaken in all these cases, and that the remarkable cures effected apparently by juries, were really cures effected by

the kindness of Divine Providence, or by the labors of Christian Scientists.

If in my awkward way, and by my crude language I shall succeed in creating enough interest to cause others to be on their guard and to study this class of cases when damage suits are brought, I shall be content.

DISCUSSION.

DR. WM. BRODIE, of Detroit, Mich., cited two cases, in one of which his testimony was for the plaintiff; in the other, against. The jury gave the plaintiff heavy damages in both cases. Conclusions: Immediately after a man is hurt the railroad surgeon should advise the company to settle, for if injury of spinal cord has occurred the patient will continue to give evidence of his injury; and if not, the damages received from the company will prove immediate cure, and thus demonstrate that no injury had taken place. Juries cannot be made to see the difference. It is only necessary that the defence be a rich corporation. He also cited a case at Cobourg, Ontario, wherein the G. T. R. W. was defendant. The injured man recovered in less than ten days after the verdict in his favor and was married. Has been in perfect health since, although he played paralyzed for near two years, with loss of sensation in his extremities. Such perfect control did he have that neither needles nor electricity could make any observable impression upon him when applied even without his direct knowledge. Of course he was aware that he was being put to some test, and his will controlled.

DR. B. A. WATSON, of Jersey City, N. J.: Spinal concussions are not so frequent as would seem from court decisions. I have observed as the most frequent injuries following railroad accidents: 1. Hæmorrhagic infarction in lungs. 2. Lacerations of liver, spleen, lungs, or kidneys. 3. Rupture of blood vessels and bladder.

DR. CHARLES B. PENROSE, of Philadelphia, said: I think that we are all in accord with the principles expressed in the papers which we have heard to-day, and we protest against the robbery of corporations and the consequent discredit brought on our profession by supposed victims of spinal concussion.

The rarity of any serious injury to the spinal cord, unaccompanied by injury to, or lesion of, the surrounding bony or ligamentous structures, is shown by the records of large surgical hospitals, where simple spinal concussion analogous to transient cerebral concussion is exceedingly rare, if not altogether unknown.

In the Pennsylvania Hospital, where there are treated yearly about 700 cases of fracture, luxation, sprain and contusion of sufficient gravity to demand in-door hospital treatment, simple spinal concussion is one of the rarest conditions met with. And yet these injuries are produced by falls, blows and collisions, which must cause more or less jarring of the whole body, besides the local fracture or contusion, or sprain for which the patient is admitted.

I am familiar with the details, and have examined the specimens of the very interesting case of spinal concussion referred to by Prof. Smith, as that of a sailor admitted to the Pennsylvania Hospital, who had been thrown violently upon the nape of his neck. The autopsy was made most carefully with the special object in view of determining the existence of any injury to the bones or ligaments of the spinal column, as in such cases there is always a probability that an unrecognized fracture is present, or that dislocation has taken place and been immediately reduced, so that no deformity is afterwards apparent. But in this man no fracture of bone or laceration of ligaments was found. Nor does it appear, from the nature of the accident, that any sharp flexure had occurred and produced undue tension upon the cord; nor was there any indication of hæmorrhage from the vessels of the cord or of the membranes. It seems, therefore, to be a simple case of injury or concussion and subsequent degeneration of the cord, produced by direct violence without any fracture or laceration of the surrounding structures.

Women at the menopause are frequent malingerers of spinal concussion, or spinal shock, and their nervous symptoms sometimes really deceive themselves and friends, being falsely attributed to some more or less severe injury coincident with the real physiological cause of their trouble.

I have examined two such cases, where, in court, trifling injuries were affirmed to have caused spinal concussion, and were held responsible for all the hystero-neuroses of the menopause. In one case the plaintiff was non-suited, in the other a compromise was effected. In both women all symptoms of spinal concussion probably disappeared as soon as the menopause was over.

An important point which Prof. Smith has mentioned, is the impossibility of giving a certain prognosis with regard to permanent disability after spinal injury.

An exceedingly interesting case, where recovery of muscular power occurred after prolonged paralysis from a very severe spinal injury and probable fracture, came under my observation about two years ago. The man had been a soldier, and in the battle of Cross-Keys had been struck by a bullet on the cartridge belt and had fallen backward from a height, upon the buttocks. He was not wounded by the bullet; but his back was so injured by the fall that he was immediately paralyzed and he was obliged to lay for three years on a water-bed, with paralysis of the legs and incontinence of urine and fæces.

He afterwards regained muscular power suffi-

ciently to lead the laborious life of a peddler, tramping, with his pack for twenty years subsequently, through Pennsylvania and New York. The only mark of injury now apparent is a slight prominence of the lower dorsal vertebra. He has never recovered control over the bladder and rectum, or sensation in the skin of the buttocks on the posterior aspect of the thighs.

DR. J. H. MURPHY, of St. Paul, Minn., said: Erichsen has cost the railroads thousands of dollars. He cited several cases of malingering.

DR. WM. H. PANCOAST, of Philadelphia, said: The question under discussion has two heads. First, is there such an injury as concussion of the spine, and are there malingerers who assume the symptoms. That there can be cases of concussion of the spine followed by serious consequences, I firmly believe, for I have seen them. I have seen cases where a violent concussion in a railway accident has so affected the contents of the spinal canal as to cause effusions, or such alterations of the membranes of the cord or of the cord itself, as to be followed by paralysis more or less complete. Many members of this Section of Surgery and Anatomy must, in the course of their lives, from mis-steps or other accidents, have recognized the force and painful effects of concussion. I have within the past few weeks been engaged in a medico-legal case, where a delicate lady, the wife of a physician engaged in a large and active practice, was thrown from a carriage in which they were both driving. A careless coachman driving a heavier carriage ran into them, and the collision threw her to the ground and against a wheel, with such violence that she became insensible. She has remained an invalid ever since, with marked symptoms of paralysis on one side. In neither of these cases was there hysteria or malingering.

There are malingerers, and we must be on our guard against them, and I have such faith in the honor of the members of our regular profession as a class, that I do not believe they would be parties to such a deception. I have been called as an expert in several such cases, and have sometimes settled the medico-legal questions in my office to the satisfaction of both sides. I feel assured that this learned body recognizes the existence of such an injury as concussion of the spine, and also that while the great railroads who do so much for the benefit of the country, should be protected from suits inspired by fraud and ignorance, that the great public should also have protection. I think that if corporations would give fair compensation for injuries received at their hands, through accident or the carelessness of their employés, and not insist that such injury should be proved to be permanent, that a cause exciting to fraud or malingering will be removed.

I give credit to the corporation surgeons of desiring to be honest, and giving a truthful scientific diagnosis from their standpoint; then why should not we also recognize the statements of the surgeon of the injured, as being inspired by the same motive, even if some one may occasionally be deceived by an ingenious and artful malingerer.

From my experience I think that very many railway injuries can be satisfactory adjudicated and the sufferers properly compensated by the judicious surgeon acting as mediator between the opposing lawyers, to the honorable satisfaction of both parties.

TWO CASES OF TUBERCULAR OSTEO-MYELITIS OF TIBIA.

Read before the North Texas Medical Association, June 12, 1889.

BY J. T. JELKS, M.D.,
OF HOT SPRINGS, ARK.
PROFESSOR OF SURGICAL DISEASES OF GENITO-URINARY ORGANS IN COLLEGE OF PHYSICIANS AND SURGEONS, CHICAGO, ILL.

Case 1.—In the Spring of 1888, Mr. —, æt. 40, consulted me for great and constant pain in the left tibia. I found him in a hovel, poorly ventilated, poorly warmed, and poorly lighted. The odor in the room was simply unbearable, but with burning tar in the room I examined the patient as best I could. Found him greatly emaciated, with large ulcer on left leg, several inches in length, with the presence of pieces of dead bone. He was being cared for by some of the charitable ladies of the place and consented to an operation. Assisted by Drs. Thompson and Gebhart, I proceeded to operate. After the anæsthetic was given I washed and scrubbed his leg with soap and water, then with solution of bichloride of mercury, 1:1000; wrapped his feet with towels wrung out of the bichloride solution, and also covered his body with antiseptic towels. An Esmarch bandage was applied above the knee-joint—about 6 inches—to make a bloodless operation. I then proceeded to cut down to the tibia, making an incision from near the insertion of the tendon of the patella to within a few inches of the ankle-joint. Peeled the periosteum back on both sides of the line of the incision, and then with mallet and chisels I proceeded to remove the anterior surface of the bone, finding the focus of the disease not far from the head of the tibia. I continued the use of the chisels and mallet until I thought all the abnormal material was removed, and when through I had a trough six inches or more long, half inch wide and half inch deep in some places. It was now scraped out with the sharp spoon of Simon, irrigated with solution of sublimate 1-1000. Again irrigated with solution of sublimate 1-500, and when this was through with a quantity of 1-5000 solution was used to wash out the stronger liquid. The operation by being bloodless was

made more thorough, because I could inspect every crevice and corner of the large trough.

A Schede's dressing was applied—that is, the cavity was sprinkled with powdered iodoform, the skin stitched together where it would meet, and over the line of incision a strip of antiseptic oiled silk was placed, overlapping the incision one inch on each side and about the same at each end; over this was placed a strip of iodoform gauze, then a thick layer of sublimated cotton, and over that several layers of sublimated bandage, tightly applied; over all a protective of oiled silk, previously soaked in sublimate solution. When all this was done the constrictor was loosened, and the cavity I had made allowed to fill with pure blood, the leg being held as near vertical as we could get it. He had no fever from the operation. The leg was dressed in one week and found almost healed by the organization of the blood clot. In six weeks he was well and upon the streets.

Case 2.—Mrs. H., æt 30, widow, consulted me for enlargement of left leg, with two ulcers near the upper extremity of tibia. Constant pain in leg, so much so that she had resorted to frequent use of morphia to relieve it. One of the ulcers opened down on the tibia. I proposed opening the bone and turning out the diseased mass. She consented, and I asked Drs. Haffner and Thompson to assist me in the work. After the use of the antiseptic precautions detailed in Case No. 1, I proceeded to cut down on the tibia in the middle line, turning back the periosteum on each side of the line of incision. This was not very readily done at the upper part of the wound, a previous operation, similar to the one I was doing, having been performed on her in Detroit, Mich. This operation was rendered bloodless by the use of a constrictor about the middle of the thigh, and hence in the use of the chisels I could follow the diseased tissue wherever it went. I chiseled away until I had a trough of the tibia leaving its sides and bottom. This was well curetted with a sharp spoon to remove any shreds of diseased material left, its entire removal being absolutely essential to success. This was rendered aseptic by use of sublimate solution 1-500, and then 1-1000; finally it was irrigated by solution 1-5000, and a Shede's dressing applied. Constrictor was now removed and leg suspended in upright position until the blood clot could form, when it was let down on the bed. Few hours afterwards blood was noticed oozing from the bandage near the ankle-joint. A rubber bandage was tightly applied for two or three hours and then removed. When the hæmorrhage had ceased the wet spots on the bandage were sprinkled with idoform, and a fresh antiseptic roller bandage applied.

This dressing was taken off at end of ten days, and not a drop of pus was found, but the upper third of the cavity in the tibia was empty, lower two-thirds filled with well organized clot, skin united over it so that the line of union was scarcely perceptible. The bandage was not applied tightly enough to prevent the loss of part of the blood clot, hence the empty third at the upper part of the wound. I tried to persuade her to let me fill this cavity with blood from her arm but she would not consent. About once in seven or ten days this cavity was filled with iodoform gauze, and it granulated until healing took place requiring three months. Had not the blood clot been lost the entire cavity would have been healed in a few weeks.

When another opportunity offers to make this operation I shall utilize the decalcified bone chips of Senn—that is, I'll fill the cavity with these chips and allow the blood to cement them together, using the Shede's dressing as above described.

Tuberculosis of bone is a subject that has not been understood until the last few years. Formerly, caries, necrosis, and tumor albus were the diseases we had to contend with, when the bones were involved. Thanks to the labors of Koch, Volkmann, and others we now know that what we formerly regarded as diseases are but the results of disease. Dropsy was once a terrible disease, and is so regarded to day by the laity and some of the profession. We know it only as a symptom. So with caries, necrosis, and tumor albus. They are but the results of inflammation of the bone, or rather of the bony envelope—the periosteum, endosteum, or medullary matter. Practically, inflammation of bone means inflammation of these substances; they are practically one. The bony material itself is not inflamed, but the endosteum, or periosteum, swelling, the resulting pressure cuts off the blood supply of the bone, and caries or necrosis is a result.

The causes of bone inflammation may be set down as trauma, cold, and fever. Upon this trauma we have engrafted an infection with the microbes of pus, tuberculosis, syphilis, rheumatism, or gout. The pus microbes, the staphylococcus aureus or albus, or the streptococcus pyogenes, are very vigorous and active and produce a very violent inflammation; whereas the bacillus tuberculosis is a slow growing coccus—it is not a pus producing coccus—and hence its effects are slower in manifesting themselves, and when only the bacillus tuberculosis is present in a joint or bone, only granulation tissue is formed. It may be said also that the bacillus of syphilis and rheumatism are not pus producing bacilli, and that their effects are slower in manifestation, and hence chronic. It follows that the acute bone inflammations are produced by the pus microbes, and the chronic inflammations by either the bacillus of tuberculosis, rheumatism, or syph-

ilis. Ninety-two per cent. of these inflammations of bone are so produced, leaving 8 per cent. for the pus microbes. Volkman, the greatest living authority on tuberculosis, says that 90 per cent. of the cases of caries are tubercular in their origin. When the trauma is slight the resulting bone inflammation is tubercular; when the injury is severe the inflammation following it is produced by the pus microbes. If the skin is not broken whence comes the microbes? We may say that they are floating in the blood current at all times, and, thanks to the leucocytes are being constantly destroyed, but when an injury results the effusion of leucocytes outside of the blood vessels renders them inactive, and a fine culture fluid is produced in which these microbes of disease have an opportunity to develop. If the injury is slight the inflammation resulting is tubercular or rheumatic; if severe, the pus microbes take possession of the field.

MEDICAL PROGRESS.

ON INJECTIONS OF TESTICULAR LIQUID.—In the Société de Biologie de Paris M. Variot reported three experiments which had been made to ascertain the physiological action of fresh testicular liquid injected subcutaneously, after the manner of Brown-Séquard. The liquid used was obtained by crushing and triturating the testicles of a rabbit or of a guinea-pig in 10 cubic centimetres of distilled water. After separating this liquid from the residual pulp by simple decantation two Pravaz syringes of it were injected under the skin of the abdomen at a dose, the injections being repeated every forty-eight hours.

Variot operated on three men, of 25, 56, and 68 years, respectively, who were much debilitated from various causes. The effects produced in these three cases were satisfactory from the first, and continued so after subsequent injections. Sixteen injections were made in all. No harmful symptoms requiring any attention were noticed. The injections proved painful but harmless. The pain following the injection is considerable for several hours, it is even accompanied by a general feeling of uneasiness, but not by fever. The first injections are especially painful, the subsequent ones much less so. The positive effects (which were the same in the three men, the nature of the substance injected not being known to them) were as follows: a general state of nervous excitement, an increase of muscular strength, regulation of the functions of the digestive channel, and some cerebral excitement. An increase of virility was found in two of the three cases.

Variot is unable to answer the question: whether these phenomena were an effect *suggested* merely by the operation, or whether they were actually due to the action of the liquid, as claimed by Brown-Séquard. The number of experiments is as yet too small.

Brown-Séquard claims that the conditions under which Variot made the experiments prove that there was no imaginary effect in these cases, but that the liquid really possesses the properties that he ascribes to it.

Brown-Séquard also made experiments with liquid obtained from other glands, and proved that a liquid obtained by trituration of the lungs contained a toxic substance. Liquids obtained from trituration of the liver and spleen had no effect whatever upon the animals treated with them.—*La Sémaine Médicale*, No. 27, 1889.

ON THE ETIOLOGY OF PERICARDITIS.—In the bacteriological examination of three cases of pericarditis G. BANTI (*Deutsche Medicinische Wochenschrift*, No. 44, 1888) found, in the first case, no microörganisms at all in the fibrinous exudate, for which reason he considered that an example of non-infectious pericarditis. It was the case of a man 48 years old who had been suffering for years from a chronic nephritis, and had died during an attack of uræmia, symptoms of pericarditis having appeared a week before death. The author thinks that here pericarditis was ascribable to the kidney disease, and that its cause might be of a chemical character, or might be looked for in the uræmic attack, as it is known that acute inflammations are often complications of acute uræmic attacks.

Two other cases of pericarditis belonged to the group of infectious pericarditis and developed in consequence of fibrinous pneumonia. In the first of these cases the diplococcus pneumoniæ was found in the pericarditic exudate, as expression of a secondary localization of the latter; in the second case the pericarditis appeared as a mixed infection caused by the staphylococcus aureus and albus. In this latter case the inflammation probably spread directly from the pleura to the pericardium, as there existed at the same time an extensive pleuritis, and the staphylococci were also found in the pleural exudate.

Regarding the first case the author supposes that the pericarditis was of hæmatogenous origin, and to prove this he tried to produce, with the diplococcus pneumoniæ, pericarditis in animals. For this purpose he created an artificial pericarditis by injecting oil of turpentine into the pericardium, or by cauterizing the latter, and then injected pneumococci under the skin. Numerous capsulated cocci were subsequently found in the pericarditic exudate thus obtained. This pericarditis was most easily produced if from twenty-four to forty-eight hours were allowed to elapse between the injury to the pericardium and the injection of the pneumococci, in which case always an isolated inflammation of the pericardium

was found which did not extend to the pleura, the peritoneum or the mediastinum.

These experiments show that a hæmatogenous pericarditis may be produced in animals by means of the diplococcus pneumoniæ.—*Centralblatt für Klinische Medicin*, No. 20, 1889.

On Pulsating Pleurisy.—Millard communicates the case of a man, 36 years of age, who was taken, in May, 1887, with pleurisy of the left side, which soon became complicated with pneumothorax. Nevertheless he improved, and could resume his occupation, until, in December, 1887, after a run, he was attacked by a sudden dyspnœa, with evident return of the symptoms of pneumothorax. In July, 1888, a tumor appeared on his back, to the left of the spinal column, on a level with the last ribs, which grew rapidly and soon pulsated synchronously with the heart. August 10 an incision was made into the thorax and 3½ litres of pus were extracted. The tumor fell and the pulsations ceased immediately. From August 28th to September 22d, during Millard's absence, five more incisions were made, and from 1,300 to 1,500 gr. of pus extracted each time, each operation being followed by the injection of a dose (which was then gradually increased from 80 to 115 gr.) of tincture of iodine. These operations were well borne. November 6th a puncture was made, with successful results, but the next morning all the symptoms of pneumothorax had reappeared. Then Dr. Peyrot performed pleurotomy. The ninth rib was resected for 3 centimetres, and again about 3 litres of pus were removed; rinsings with iodized and alcoholized water were made repeatedly, as often as four times a day, but hectic fever and diarrhœa continued, and November 27th the patient died. An autopsy was not made. Millard thinks that Fériol will be inclined to cite this case in support of his theory, inasmuch as the patient, before showing the symptoms of pulsating empyema, had had pneumothorax twice; he (Millard) is of the opinion, however, that experiments will be necessary to arrive at a true explanation of pulsating pleurisies.—*La Sémaine Médicale*, No. 27, 1889.

Treatment of Diabetes.—In an article by Albert Robin on this subject the following points are discussed: 1. The modifications which the laws of exchange undergo in diseases, explain the pathogeny of the latter and become the source of certain therapeutic indications. The knowledge of the effects upon normal exchanges produced by a drug renders it possible to foresee its real therapeutical application. There is reason for a revision, from this double standpoint, of the physiology of disease and of that of drugs. This revision made, the science of therapeutics will enter upon a new era; it might then reclaim the epithet "rational" and repudiate forever the fumbling of the past.

2. Biological chemistry shows that there exists in diabetic patients an exaggeration of all the acts of general nutrition, and also an increase of activity in certain special organs, especially in the liver and the nervous system. The undeniable fact of overactivity of the general nutrition and of the hepatic cells influenced by a direct or reflex nervous irritation, should be the starting point for the therapeutics of diabetes. It may be affirmed in advance that every drug which slackens, in whatever manner it may be, the general changes and that of the nervous system, will diminish immediately the glycosuria. But a drug will only have a beneficial effect in diabetes if it retards the general excitation through the intermediation of its primitive action upon the nervous system, and if it does not exert too energetic a suspending influence upon the functions of this system. Therapeutic substances which accelerate denutrition should be done away with. It has been shown, clinically and experimentally, that they have produced no favorable results whatever.

3. The therapeutical indications in diabetes may consequently be formulated as follows: *a*. Withdraw from the organism, by a proper diet, the materials assisting in the formation of sugar, and free the hepatic cell from the agent irritating its functions. *b*. Slacken the general dis-assimulation and the formation of glycogen by the aid of therapeutic means which diminish the clinical actions of organic life through the intermediation of their primitive action upon the nervous system.—*Gazette Médicale de Paris*, Vol. vi, No. 26, 1889.

On Sciatic Neuritis in those with Varicose Veins.—Numerous observations attracted the attention of Quénu to the seemingly not rare coincidence of varices with a neuralgia appearing in the clinical form of a typical ischias. The symptoms in question are not the troubles complained of by most persons afflicted with varix, heaviness, sleeping of the lower extremities, cramps in the calves, etc., but neuralgic pains in the whole length of the nervous ischiadicus, which may be produced also by pressure upon the well-known points. Of 61 patients afflicted with varix, 6 consulted Quénu not on account of the latter, but for the neuralgia; in 31 out of 56 other cases in which the patients did not complain of spontaneous pains, pressure upon certain points of the sciatic produced them. The neuralgias were not very acute and did not manifest themselves in the form of attacks, but existed continuously in a moderate degree, and were felt especially after a walk or after standing for a long time. In the anatomical examination of the nerves Quénu repeatedly found varices in the veins of the sciatic, but he thinks that the pains were caused by a genuine neuritis, originating from a

phlebitis, not by the pressure of the varices upon the nerve-fibres. This neuritis gradually spreads from below upward, from the nervous tibialis post to the nervous popliteus, and to the sciatic. A disturbance of the peripheral nervous system caused by the obstruction of the circulation in the veins might give rise to trophic troubles in the skin, from simple erythema to varicose ulcers. Every patient suffering from ischias should, therefore, be examined for deep varices. If such are found a well-applied elastic bandage will often relieve pain more effectively than all other means. —*Centralblatt für Chirurgie*, No. 26, 1889.

EXAMINATION OF THE BLOOD FOR THE EXISTENCE OF TYPHUS-BACILLI AS A DIAGNOSTIC MEANS.—DR. JANOWSKI, of Kiew, did not succeed in proving the existence of typhus-bacilli in even a single one of the blood-samples taken from patients in whom abdominal typhus has been diagnosed with certainty. This fact, as also the results of the experiments of other investigators convince us that the probability of discovering typhus-bacilli in blood taken from the skin of a finger, of a roseola, or of a vein of a typhus patient, is but little. Janowski thinks it is so for this reason: "In the first place, the parenchymatous organs, especially the spleen, are the places where the typhus-bacilli accumulate; from here they are carried by the blood-stream into the general circulation only in small quantities, as is proven by post-mortem examinations of the blood of typhus patients; and we can take but little blood for diagnostic purposes. Perhaps more favorable results might be obtained if considerably more blood could be taken, in short, if a patient could be actually bled; but such a measure, even if not carried to the extreme, seems inexpedient in a disease as debilitating as typhus. For this reason the examination of the blood of typhus patients has no significance for diagnosis."—*Centralblatt für Bakteriologie und Parasitenkunde*, No. 20, 1889.

ON PLEURISY CAUSED BY DIPLOCOCCUS PNEUMONIÆ.—NETTER, reports in the Bulletins et Mémoires de la Société Médicale des Hôpiteaux de Paris, 46 cases of pleurisy, 40 of which were caused by diplococcus pneumoniæ; he distinguishes two kinds of pleurisy. The first kind occurs after pneumonia. It is generally of a purulent character and susceptible to cure, but frequently leads to perforation into the lung and pneumothorax. It often occurs epidemically during the months when pneumonia is most frequent. It occurs oftener in young people than in old people. As a mark of distinction from other pleurisies the author mentions that the exudate is creamy and does not easily separate into plasma and serum. Often the exudate accumulates in a circumscribed pleural sac and the disease takes a chronic course. In 5 cases of this kind of pleurisy the author was enabled by the plate-cultures to prove the diplococcus pneumoniæ.

The second kind of purulent pleurisy caused by diplococcus pneumoniæ originates independently, *i. e.*, without pneumonia. The author called attention to the occurrence of this disease as early as 1886, and has observed 10 cases so far. He also mentions the observations made on this subject by Weichselbaum and Serafini. In 8 of his cases he instituted bacteriological researches and experiments on animals; four times he found the diplococcus pneumoniæ alone, and four times he found it associated with the staphylococcus and streptococcus pyogenes. Supported by his observations. Netter believes that the greater number of purulent pleurisies occurring in children is caused by the diplococcus pneumoniæ.—*Centralblatt für Bakteriologie und Parasitenkunde*, Vol. vi, No. 1, 1889.

ON THE TREATMENT OF JUXTA-ARTICULAR FRACTURES WITH MASSAGE.—A. L. LAPERVENCHE says: The vicinity of a joint enhances the gravity of a fracture and demands appropriate treatment. As it must be our aim to aid the resorption of the blood discharged which, playing the rôle of a foreign body, is capable of causing a subacute plastic arthritis, massage appears certainly indicated. Facilitating the functions of secretion and excretion of the skin, rendering the afflux of blood easier, favoring nutrition and the contractility of the muscles, one of its most beneficial results will certainly be the avoidance of stiffness of the joint. Practice has begun to confirm this theory. Fractures of the lower limbs, of the radius, femur, humerus, elbow, knee-pan are treated with massage to the best advantage. In this way not only atrophy of the limb is avoided and the movement of the joint reëstablished, but the cure is also more rapid.—*Gazette Médicale de Paris*, Vol. vi, No. 26, 1889.

ON THE SEMIOTIC SIGNIFICANCE OF A RED LINE BORDERING THE GUMS IN TUBERCULOUS PHTHISIS.—In an article on this subject published by G. STICKER in the *Münch. Med. Wochenschrift*, No. 37, 1888, the author declares that the symptoms which—as experience has shown—may precede phthisis (pseudo-chlorosis, different kinds of dyspepsia) are to be taken with great probability as a manifestation of latent phthisis if the red line bordering the gums exists simultaneously with them. In persons of youthful age it is undoubtedly so. The absence of this red line, under the circumstances, is without significance for the diagnosis in female patients; but where young male patients are concerned the probability of latent tuberculosis is very small if that red stripe on the gums is missing. The author illustrates the application of this theory by several observations.—*Centralblatt für Klinische Medicin*, No. 26, 1889.

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THE NEW CÆSAREAN SECTION.

Two notable papers that relate to the "New Cæsarean Section" have appeared at a recent date. FRITSCH,[1] of Breslau, has modified the method of SÄNGER in two important particulars. In the first place, he has rejected the sero-serous suture. In a case of Cæsarean section, according to Sänger's method, he loosened the elastic tube after the insertion of the muscle suture, to restore the circulation, when he was surprised to see the arrest of hæmorrhage before the introduction of the sero-serous suture. Observation of the conduct of the uterine walls after the enucleation of myomata and the insertion of the *étage* suture confirmed the impression that the Sänger sero-serous stitch is superfluous. The way for this step, however, was prepared by Schroeder, who repeatedly asserted that the welting-in of the peritoneum was not only unnecessary, but also a source of danger, that best union could be effected by the juncture of the cut edges of the peritoneum. The second change in the technique of the operation is not less significant. Fritsch recommends that the uterine suture be used to include all the tissues—decidua, muscle and peritoneum—instead of the muscle and peritoneum only as practiced by Sänger. If the case is operated on early, the cavum uteri is aseptic, and its sterilization by irrigation and iodoform is purposeless. The decidua is as sterile as the muscularis. Moreover, when the stitch is tightened, the thread rubs through the decidua and comes to lie upon the muscularis. The advantages of this simple suture are substantial. Much time and trouble are saved—of moment in such an operation. Then, it is possible to effect a more exact apposition of the cut surfaces, and a firmer line of union by reason of the amount of tissue included. Hæmorrhage is also better arrested, when the entire thickness of the uterine parenchyma is embraced for some distance from the edge of the cut. Fritsch inserts the suture about 1 centimetre from the edge of the cut on the left side, passes it through all the tissues to a point distant about ½ centimetre from the internal edge; on the right side, the suture is passed from within outwards. The sutures are separated by a distance of 1 centimetre.

Against these modifications, but little on *a priori* grounds can be urged, seeing that Fritsch reports two successful cases. The chief danger in connection with the second item—the insertion of the suture through the decidua—consists in the liability to infection of the suture material, particularly if silk be employed. This danger is present even when the cavum uteri is aseptic at the time of operation; obviously, the risk is greatly increased, when the decidua is infected after attempts at delivery *per vaginam* and the like. On this subject, DR. BAYARD HOLMES[2] has well said: "It makes no difference how small an amount of infection gets into a solid spongy material like a piece of silk. Cells do not migrate into the silk suture far enough to drive out the infection and, as it were, granulate it off. Therefore, when the least end of a buried silk suture becomes infected, it is only a matter of time until colonization of the whole suture takes place. In the tissues surrounding the suture granulation tissue will appear, and a coagulation-necrosis of the wall of this sinus will cause a collection of pus to appear at the point of least resistance."

If further experience supports Fritsch's modification, the old classical Cæsarean section will be rehabilitated after its notable substitution first by Porro's supra-vaginal amputation and secondly by Sänger's ingenious method. This fact, however, will not lessen the merit of the work of the observers just named. As remarked by Fritsch, "Sänger's great services are universally recognized, they depend neither upon silver wire nor sero-serous suture."

The second paper, by H. THOMSEN,[3] contains

[1] Centralbl. f. Gyn., No. 23, 1889. (Original—Mittheilung.)

[2] Transactions of the Gynæcological Society of Chicago, June 21, 1889.

[3] Centralb. f. Gyn., No. 24, 1889. (Original—Mittheilung.)

the results of an experimental study of the best suture material that may be used in intraperitoneal operations, in general, and in Cæsarean section in particular. The experiments were performed on rabbits, cats, and bitches, immediately after they had cast their young. Incisions several centimetres in length were made through the right and left horns of the uterus, and these cuts were united with the suture materials under investigation. Different material was used to unite each cut. Sutures were also placed in the omentum and abdominal wall, to test not only the behavior of the ligature, but also the relative absorptive powers of the sites selected as compared with the uterus. The materials used were carbolic catgut, chromic acid catgut, silk and silkworm-gut. All materials were sterilized, as demonstrated by control cultures.

Thomsen draws the following conclusions: 1. Silk is the safest and best suture material, because it can be absolutely sterilized, and in time is absorbed. 2. Chromic acid catgut, silkworm-gut, like silver wire, are incapable of resorption, and ought not to be used. 3. Carbolic catgut, like all forms of catgut, ought to be rejected on account of the danger of infection. Moreover, carbolic catgut is unfitted for large intra-peritoneal wounds by reason of its rapid absorption.

The methods of this investigation are well chosen, and the conditions of the experiments eliminate common sources of error. Thomsen's conclusions, accordingly, may be accepted as decisive in the vexed question of suture material, for the time being at least.

PRURIGO SECANDI.

PROFESSOR LÉON LEFORT, editor, or more accurately speaking, author of successive issues of Malgaigne's Surgery, and one of the leading operators in France, is not a person whom even the most venturesome of recent graduates will be apt to accuse of undue timorousness in matters chirurgical. Much weight may, therefore, happily be attached to a warning from such a source against the reckless and ill-considered abuse of the knife, which has unfortunately been rendered possible by the introduction of anæsthetics and antiseptic measures, and which has reached so far that the legitimate field of surgery has often been abandoned in an apparent endeavor to ascertain how much vivisection is compatible with the temporary maintenance of life.

Among the things which have almost become affairs of everyday routine, LeFort remarks, cancerous stomachs have been resected, the spleen and the kidney extirpated, vesical tumors removed, the uterus and tubes ablated; multitudes of women have been castrated, even when the ovaries were healthy; the knee-joint has been opened to suture a simple fracture of the patella; the abdomen opened to fasten to its wall a prolapsed uterus, or even solely for diagnostic purposes, etc.; and he cites an instance wherein a surgeon, to spare a young woman's modesty the inconvenience of a vaginal examination, preferred an exploratory laparotomy, with the satisfactory result of discovering that there was no abdominal lesion. Certain operators of established notoriety, or even their junior imitators, find occasion to perform their favorite procedure hundreds of times within a few months; be it thyreoidectomy, nephrectomy, hysterectomy, salpingotomy, radical cure of hernia, or aught else. Of this, the author says: "When I see the multiplication of successive operations for affections which a hospital experience of more than forty years has shown me to be either relatively rare or curable by non-operative treatment, I am led to believe that many of these surgeons, instead of asking themselves what operation the disease and the hopelessness of any other treatment compels them to perform upon the patient, inquire rather who is the patient whom they can induce to undergo the operation just then under consideration not to say in fashion."

Several influences combine to encourage this operative craze, and of these the first to be mentioned is the pecuniary appetite which threatens to degrade the healing art to the level of a trade. Verneuil is quoted as intimating that some surgeons who persuade a patient to risk the speedier possibilities of the knife, with argument that "time is money," may be suspected of a mental reservation which whispers "operation is money also," and it is even alleged that in Paris—let us hope nowhere else—a commission on the operator's fee is given to the physician who procures the case, so that the latter is tempted rather to seek the specialist who will insist on the most lucrative, if unnecessary, operation, than to consult the surgeon who can give the wisest ad-

vice. The public, hearing of brilliant successes, but ignorant of possible dangers and disastrous failures, and impatient of the tediousness of safer and surer medical treatment, is readily induced to fly to evils that it knows not of, and thus aids skilled hardihood in bringing needlessly heroic measures more and more into vogue.

A fanatical and exaggerated confidence in antiseptic methods plays no small part in perpetuating the abuse. If ovariotomy be fatal in one seventh of the operations performed, hysterectomy in one fourth, nephrectomy in one-third, or laparotomy for myomata in one-half, the deaths are attributed to neglect of some minor detail—to the employment of an ill-prepared ligature or the omission of this or that petty precaution against the entrance of a few stray "germs,"—and the blame is ascribed to the individual surgeon, not to the operation.

The principles which should guide the true surgeon's intervention are these: The fact that an operation is capable of curing a disease is not in itself a justification for operating; the gravity of the operation must be compared with the gravity of the disease; the benefit to the patient must be proportional to the danger to which he is exposed. It is not admitted that the mortal character of a malady is a sufficient reason for desperate expedients. There are cases where the surgeon must recognize the impotence of his art; his first consideration should be to avoid doing harm, and he should learn to abstain whenever the immediate dangers of active interference are greater than the temporary amelioration that may be hoped for. He should not imperil life to relieve an infirmity or deformity which does not menace existence, unless it be such as to incapacitate the sufferer from earning a livelihood. Ankylosis in a position rendering a limb useless, extreme genu valgum, exaggerated rhachitic distortions, ulcerated talipes preventing walking, may warrant resection, osteotomy, or even amputation, but it is a different thing to expose a patient with reducible hernia to the risk of immediate death in order to save him the annoyance of wearing a truss, or to avert the improbable chance of a strangulation twenty or thirty years later. The interest of the patient is to be placed above all other considerations; a cure sought by the surest and least hazardous therapeutic means rather than by dangerous displays of dexterity; solicitude for the sanctity of human life, should override professional ambition or monetary covetousness. If any case give cause for doubt, let the surgeon pause and ask himself "what he would do, what he would advise, if the question concerned his mother, his wife, his child; and let the answer dictate his conduct. So will he often reject perilous heroic exploits; he will perform fewer operations; he will acquire notoriety less easily, and fortune, perhaps, not at all; but he will be sure of fulfilling his duty as a good and honest surgeon, and of being regarded by his patients as *vir bonus medendi peritus*."

The warning which we have briefly transcribed from its foreign source is reproduced in all its fervid eloquence by the *Gazette Médicale de Montréal* from the latest edition of the *Médecine Opératoire*, of Malgaigne and LeFort, and most of our readers will be willing to admit its pertinence—at all events, to France. In displaying the beam which obscures the surgical eye of continental Europe, it would, of course, be invidious to suggest the possibility that ophthalmic introspection might detect a mote in our own.

EDITORIAL NOTES.

HOME.

Dr. Thomas Waterman, of Boston, is said to be the most skilful ventriloquist in that city.

Dr. William Warren Potter, of Buffalo, N. Y., has had conferred upon him the degree of Doctor of Medicine, *Honoris Causâ*, by the Kentucky School of Medicine.

The American Society of Microscopists commences its annual meeting at Buffalo on the 20th inst.

Ephraim Cutter, M.D., LL.D., F.S.Sc., has received a gold medal from the Society of Science, Letters and Art of London, for his paper on "The Relations of Medicine and Music," and also for one on "Hygienic Drinks" and one on "Cleaned Whole Wheat."

Dr. William Hailes, Jr., of Albany, N. Y., will read a paper on "Intubation of the Larynx" before the meeting of the British Medical Association.

An Epidemic of Dysentery.—Dysentery has become epidemic at Warsaw, Ill., and the people

are becoming greatly alarmed. Fifteen deaths have occurred since the 29th ult. Four died on the 1st inst. and four on the 2d. It is now estimated that at least 180 cases exist in Carthage, Ill., and it is feared many of them cannot recover. The victims are taken suddenly and die in a short time. The disease has appeared at Hamilton, and is said to be epidemic at Canton and Cahoka, Mo.

ASSOCIATION ITEMS.—Drs. D. Webster Prentiss, of Washington, and L. Duncan Bulkley, of New York, are the delegates to the meeting of the Canadian Medical Association. The name of Dr. Kinyoun should have appeared in the Annual Report of the Committee on State Medicine in place of Dr. S. T. Armstrong. Dr. Charles W. Brown, New York, is a member of the Committee on Necrology, not "J. W. Brown."

THE CANADIAN MEDICAL ASSOCIATION.—We again call attention to the fact that the annual meeting of the Canadian Medical Association will be held at Banff, a station on the Canadian Pacific Railway, in the heart of the Rocky Mountains, at the entrance of the "Canadian National Park." The meetings will be held on August 12, 13 and 14. The British Medical Association and many societies of the United States have been invited to attend. Special rates are offered by the railway company. Application should be made to the General Secretary of the Association, Dr. Bell, whose address is Union Avenue, Montreal.

SANITARY PROGRESS.—Why is it that our State Legislatures do not take more interest in enacting laws to secure immunity from preventable diseases arising from inadequate sanitary regulations or the enforcement of existing laws? *The Sanitary News* in commenting on this subject says: "Legislation seems to be the greatest obstacle in the way of sanitary progress. Science has made plain the duties of officers and citizens, but legislation is tardy in providing means for their enforcement."

FOREIGN.

FATHER CONRADY has been stricken with leprosy at the leper settlement in Molokai.

A UNIVERSITY under British tuition is being established at Pekin, China, and the College of Medicine in affiliation therewith is in working order.

FEMALE MEDICAL PRACTITIONERS in Russia are forbidden to attend adults of the male sex.

IN GERMANY the Government has come to the conclusion that there are enough medical colleges in the country and refuses to allow any more to be organized. PROF. FRESENIUS, of Wiesbaden, after a long series of chemical analyses, declares that an egg contains as much nourishment as a pound and an ounce of cherries, a pound and a quarter of grapes, a pound and a half of russet apples, two pounds of gooseberries, and four pounds of pears, and that 114 pounds of grapes, 127 pounds of russet apples, 192 pounds of pears, and 327 pounds of plums are equal in nourishment to 100 pounds of potatoes.

IN FRANCE the Director of the Assistance Publique has distributed among the *infirmiers* and *infirmières* of the Paris hospitals 2,000 tickets for the Paris Exhibition. The decoration of the Legion of Honor has been conferred upon Dr. Allan Herbert, physician to the British Embassy at Paris. The French Society for the Advancement of Science is now in session. The practical sanitation of the Paris Exhibition is said to be execrable. The Minister of the Interior has given 1000 francs to the Paris Ambulance Organization.

IN GREAT BRITAIN the Privy Council has issued an order in the City and Metropolitan District of London that dogs are to be muzzled, except those actually employed as sporting dogs or in the capture of vermin. The spread of rabies has brought forth the order. Unmuzzled dogs will be slaughtered, as also will those with or suspected of rabies, or having been bitten by a rabid dog. The Princess of Wales has accepted the Presidency of the National Pension Fund for Nurses. The weekly issue of the *British Medical Journal* has reached 15,550 copies. Professor Struther has resigned the Chair of Anatomy at Aberdeen University. An exhibition of electrical appliances is now open at Birmingham and will continue for three months. Deputy Surgeon-General Francis Day, a distinguished officer and naturalist, died at Cheltenham on the 10th ult. The sanitary condition of Glasgow is very bad, and the Corporation is considering the necessity of applying to Parliament for increased sanitary powers. The London Hospital has become affiliated with the National Pension Fund for Nurses.

TOPICS OF THE WEEK.

PHYSIOLOGICAL LIMITATIONS.

From the able address of DR. DAVID W. CHEEVER at the annual meeting of the American Surgical Association held in Washington, May 14–16, 1889, we make the following brief extract:

"When we consider physiology we are struck both by its great progress and by its imperfections. The older physiology is obsolete and discarded, but in the newer physiology the functions of some large and important organs are still undetermined. The ductless glands, for instance, the spleen, the thyroid, the thymus and the supra-renal capsule.

"An ignorance of their function renders the surgeon unable to predict the consequences of their removal. Of what avail the brilliant operation to excise a double goitre if it is to be followed by an obscure degeneration of the nervous or glandular system? Again, in organs of known function the limit of the digestive power of different portions of the alimentary canal is not yet definitely learned.

"How can we get along without a gall-bladder? How important is the pancreas? Can the duodenum supplant the stomach in nutrition? How much ileum can be removed without starvation? What will the rectum digest? All these are pertinent questions for the physiologist, and have a direct bearing on modern surgery."

PRESIDENTIAL ADDRESSES.

At the last annual meeting of the Ohio State Medical Society the President, DR. P. S. CONNER, dealt with the conventional "President's Address" after this fashion:

"As is the appendix to the intestinal tract, a useless survival of a once important organ, so is the presidential address to the annual proceedings of the State Medical Society. In the days when books and journals were few, communication slow, professional work physically harder than at present, there was, I doubt not, good reason for requiring of the recipient of high honors an abstract of the year's progress, suggestions of the work that might and should be done, or reports of diseases and injuries carefully investigated and successfully treated.

"Now that to each one of us what appeared in print but a short time ago in San Francisco, Boston, Vienna or St. Petersburg is familiar talk, it may be well asked of the inaugural address, *Cui bono?* Hardly yours; surely not his to whom the months of prospect of its preparation are as the fly in the ointment of the apothecary. But custom is imperious and we are all its slaves. Like my predecessors, I obey its mandates."

CAFFEINE AS A TONIC.

DR. HENRI HUCHARD has some good observations to present on the use of caffeine as a tonic or excitant in adynamic states. He considers it much superior to ether, which may be more exciting but is much less tonic in its action. The diuretic action of caffeine is now admitted by everybody, but its cardiac action is still contested. One point in the use of caffeine in adynamic states is that it can be given in considerable quantities without danger. In one case of extreme weakness (with from forty to fifty stools a day) as many as ninety-five hypodermatic injections of caffeine were given in a month. Dr. Huchard uses these injections with great freedom in typhoid fever at the Bichat Hospital, as well as in cases of serous pneumonia, and reports a number of cures in very grave cases. In experiments that M. Huchard made on animals, he found that the drug acted on the nervous system, and Semmola, (of Naples) states that its principal action is on the medulla oblongata. In any case two important facts are evolved from Huchards' experiments: First, that caffeine has a remarkable efficacy in large hypodermatic injections in all adynamic cases. Secondly, it can be given in large doses without danger. M. Huchard employs the following formulas: ℞. Caffeine, 2 grams; benzoate of sodium, 3 grams; and distilled water, 6 grams. The solution must be made while hot. Each syringeful contains 20 centigrams of caffeine. Sig.: Inject 6 to 10 syringefuls *per diem*. The second formula is: Caffeine, 4 grams; salicylate of sodium, 3 grams; distilled water, 5 grams. Here the syringe contains 40 centigrams of caffeine, and from four to five injections are given each day.—*Paris Correspondence New York Medical Journal.*

LEPROSY IN MADRAS.

According to census returns, the proportion of lepers amongst the population of Madras 4.4 per 10,000 against 5.2 in Bengal and 8.5 in Bombay; but there is reason to believe that these figures fall short of the actual extent of the disease. In Madras it is on the whole slightly more prevalent in coast districts than in inland, the ratios being 4.9 in the former, and 4.4 in the latter per 10,000 of population. The proportion of lepers in the several districts ranges from 2.0 in Coimbatore to 10.5 in Madras City. The districts showing the highest ratios next to Madras are Nilgiris 8.0, Tanjore 7.0, and Chingleput, Malabar, and North Arcot each 6.0 per 10,000. The disease attacks Europeans and Eurasians as well as natives, but is most common in natives. The propagation of leprosy is no doubt largely influenced by heredity, but recent observations appear to show that it is also contagious. In localities in which lepers are at large with the disease in an active state, and having open sores, there seems to be an increased tendency to fresh cases amongst the general population. As regards the part which heredity plays in the transmission of leprosy, we know that persons with the disease in an active state have diminished fecundity, and that mortality runs high amongst the offspring of lepers. These two peculiarities, therefore, tend to keep in check the leprous population, but I have no doubt that it is increased by contagion and probably other influences. That segregation is of value in holding the disease in check seems well established, but to be of much value in India it would require to be carried out on a more extended scale than at present.—*Surgeon-General Bidie, British Medical Journal.*

CHLOROFORM IN OBSTETRICS.

In regard to the use of chloroform in obstetrics, M. BUDIN gives numerous cases to prove that labor pain can

be lessened by quite small doses of chloroform in most cases. It is given here in the manner called "*Queen's chloroforming*," that is to say, just enough to dull sensibility. In a few cases, however, it is necessary to proceed to complete anæsthesia, which does not prevent labor going on to a successful issue. The principal indication for the use of chloroform in labor is found in extreme pain. Often it is only during the period of expulsion that it is needed, but when the pains are intense during dilatation it may also be used. Rigidity of the os uteri is an important indication. There is an extraordinary degree of tolerance in parturient women for chloroform, so that the contra-indications are extremely few.—*New York Medical Journal*, July 27.

NATURAL ELECTRICITY.

An extraordinary tale comes from Burmah. Mr. Ronald H. King, an electrician well-known to the Burmese, while on a prospecting and shooting expedition in the island of Labuan, is said to have discovered a mineral from which electricity can be obtained without apparatus of any kind whatever. The mineral is described as being in the form of a black stone, of excessive hardness, and very great specific gravity, being nearly as heavy as platinum. A small block in the shape of an irregular cube, measuring 4.3 inches one way, by 5.2 inches the other way was brought away, and on bringing it into the testing room, a strong effect was noticed upon the galvanometer. At first it was thought that the mineral was an ordinary loadstone, but on tests being made, it was found that the force was more akin to that of an electro-magnet, and that a strong current would flow when the mineral was connected in a circuit. Further tests revealed that a difference of potential of forty-seven volts could be detected at the extremities, the internal resistance of the mass being twenty ohms. The block appears to waste away very slightly, leaving a slight gray powder upon the surface when connected up for some time. The electrician now uses the block to light a couple of incandescent lamps in his laboratory!—*Times and Register*.

SPECIAL HOSPITALS.

The Boston Medical and Surgical Journal of July 25th devotes a page to a review of an address recently delivered in London by SIR ANDREW CLARK, President of the College of Physicians. After an eloquent plea for the generous support of the larger hospitals, he pays his respects to a class of special hospitals who seek to divert and divide the public charities, after this wise:

"A doctor who cannot get on in the ordinary way takes to studying the great toe, and he discovers something about it never before known. In the course of his studies he ascertains that the diseases of the organ are not only supremely important in themselves, but that they have the most intimate relation to all the other serious diseases of the body. He also invents a wonderful instrument, whereby he can look into the great toe and see what is threatening, and prevent all those terrible things which happen in the organ and affect the whole system. He goes to his friends, shows them his instrument and tells them of his discoveries. They then club together and establish a Hospital for the Treatment of Diseases of the Great Toe. They soon get patients who are convinced of the vast importance of the diseases of the great toe. Marvelous cures are effected, and all sorts of frightful diseases are prevented. They have an annual meeting. They have a Chairman who sets forth bashfully in the presence of the great physician the diseases of the great toe, the wonderful things that have been done, the service which has been rendered by the hospital, the terrible prejudice it has had to encounter, and the determination that this great institution shall be liberally supported, notwithstanding the prejudices of the medical profession and of those who herd with them."

In all seriousness he raises the question whether special hospitals have not been overdone in London, and the contributions of benevolent people directed to unwise uses. And the journal from which we quote raises the question whether there is not a growing tendency in this direction in our own large cities.

POISONING WITH ACETANILIDE.

Before the Baltimore Medical Association, DR. J. E. GIBBONS recently read a paper on the results of a mistaken dispensing and administration of a one-drachm dose of acetanilide where five grains of antipyrin had been intended. The *Maryland Medical Journal* for July 6th contains a brief account of the symptoms, which were those of cardiac depression, cyanosis, and nausea. The treatment, which removed the threatening prostration, consisted of the use of tincture of belladonna and brandy. The headache, for which the dose was taken, was not relieved, and Dr. Gibbons holds that if the second dose had been repeated in two hours, as the mistaken directions ordered, death would have been the result. There was an error on the part of an apothecary, it is alleged, in writing out the copy of a prescription, causing the substitution of three drams of acetanilide for half a drachm of antipyrin. It was a case of unauthorized "borrowing" of a prescription by a neuralgic person who had not been prescribed for by a physician. The antidotal doses of belladonna consisted of four drops of the tincture, every half-hour, for four hours, and at wider intervals afterwards.—*N. Y. Medical Journal*, Aug. 3, 1889.

WILKESBARRE'S BAD WATER.

A despatch from Wilkesbarre, Pa., states that the typhoid fever epidemic in that city does not appear to be on the decrease. The total number of deaths within three weeks is thirteen. According to a well established rule in typhoid, that the death-rate runs at from 10 to 12 per cent., this makes a certain existence of over 100 cases in the city. It is highly probable that the total number of cases is largely in excess of that number. Dr. L. H. Taylor, representing the State Board of Health, made an examination of the water-supply system of the Wilkesbarre Water Company, and his report confirms the first theory of the cause of the disease. He finds there are twenty-five or thirty houses along the course of Laurel Run, the stream from which the water is taken, and holds the belief that the excessive rains of last month washed the refuse of these houses into the stream. In addition to the typhoid fever cases there are a great number of cases of malarial fever, dysentery, and kindred diseases.

SOCIETY PROCEEDINGS.

AMERICAN MEDICAL ASSOCIATION.

Fortieth Annual Meeting. Report of Sections.

Sections on Diseases of Children.

FIRST DAY, JUNE 25.

The Section was called to order by the Chairman, DR. JOHN A. LARRABEE, who delivered an able and eloquent address. He congratulated the Section on the opportune time and pleasant place of the meeting, and said that none could be more fitting for the burial of professional animosities. An earnest plea was made for the rejection of the amendment to the constitution pending before the Association to abolish the Section on Diseases of Children, and spoke highly of the good work that the Section has and can accomplish.

On motion of DR. CHRISTOPHER, of Ohio, the Section unanimously resolved to continue as a distinct Section, and a committee of three were appointed to bear the resolution to the general Association, and defend the continued autonomy of the Section.

On motion of DR. E. F. BRUSH, of New York, the recommendations of the Chairman's address were referred to a committee, composed of Dr. Brush, of New York, Dr. Christopher, of Ohio, and Dr. Watson, of New Jersey.

DR. T. B. GREENLEY, of Kentucky, read a paper on *The Management of Infants during the First Year.* The doctor gave statistics of the alarming mortality during the early years of infant life, and carefully reviewed the causes for it. He recommended the better education of mothers, and advocated greater care of the infant in every particular. Syphilis, in his experience, was a frequent disease.

The paper was discussed by Drs. Senta, of Texas, Whitney, of Rhode Island, Watson, of New Jersey, and Latimer, of Maryland.

DR. E. F. BRUSH, of New York, read a very valuable paper on *Cow's Milk for Infant Food.* The doctor took the position that cow's milk was the best and only practical substitute for the mothers, and showed that if as great energy were bestowed upon improving the quality of it, by overseeing its source and its can after milking, as has been given to the manufacture of various chemical foods, great improvement in infant feeding would result.

DR. J. A. JEFFRIES, of Massachusetts, commended Dr. Brush's paper, and advocated sterilizing, when the milk cannot be obtained perfectly fresh.

DR. CHRISTOPHER, of Ohio, commended the points made by the doctor on the management of dairies. In Cincinnati he had seen some deplorable instances in the manner of caring for milch cows.

The paper was further commended and discussed by Drs. Sheldon, of New York, Latimer, of Maryland, Gates, of Pa.

On motion of DR. WATSON the Secretary was instructed to preserve the records of the Section, and to give them to his successor.

On motion of DR. W. P. WATSON a committee of three were appointed, to bring in nominations for Chairman and Secretary of the Section for the ensuing year.

SECOND DAY, JUNE 26.

The Section was called to order at 2:15 P.M. Dr. J. A. Larrabee, Chairman.

A paper by DR. N. GUHMAN, St. Louis, Mo., on *Summer Diarrhœa and Dysentery* was read by title.

DR. PETER HOOPER, of Philadelphia, Pa., read a valuable paper on *The Intestinal Diseases of Children during Hot Weather.*

The paper was discussed by Drs. W. P. Watson, Jersey City, I. N. Love, St. Louis, Mo., and the Chairman.

The paper, *Heart Failure in Diphtheria*, by DR. G. W. JONES, was read by title.

The paper on *Intubation of the Larynx with report of Cases* was read by DR. F. E. WAXHAM, of Chicago. The doctor reported continued success in the operation.

The paper was ably discussed by Drs. G. W. Gay, of Boston, and Whitney, of Rhode Island.

DR. H. D. CHAPIN, of New York, read a paper on *Pseudo-Membraneous Rhinitis.* The doctor held that there was a pseudo-membraneous rhinitis which was distinct from diphtheria, and that it was a comparatively mild affection.

DR. COHEN, of Philadelphia, agreed with the doctor in there being each a disease distinct from diphtheria,

DR. WHITNEY thought the gentleman had described cases of nasal diphtheria.

DR. C. R. EARLY, of Ridgeway, Pa., read an exhaustive paper on *Scarlatina.*

The committee on nominations reported the name of Dr. I. N. Love, of Missouri, for President, and Dr. E. F. Brush, of New York, for Secretary of the Section for the coming year.

The Report was unanimously adopted.

THIRD DAY, JUNE 27.

Section called to order by the Chairman.

The committee on the Chairman's address reported that they had met with the Committee on Dietetics of the Association, and had adopted the following preamble and resolutions:

WHEREAS, Certain garbled extracts from the proceedings of this Committee on Dietetics, and the Section on

Diseases of Children, have been published in medical journals as advertisements, and thereby have reflected upon this Association; therefore be it

Resolved, That the Committee on Dietetics and the Section of Diseases of Children, have not in the past, or do they now, commend any of the proprietary preparations used as foods, and

Resolved, That the said Committee and Section earnestly protest against the action of manufacturers in charging partiality for any food, and they hereby, condemn the action of those medical journals which have published such advertisements, and further,

Resolved, That a copy of these resolutions be sent to THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION for publication.

E. A. Wood, M.D., Chairman Committee on Dietetics; Frank Woodbury, M.D., Secretary. J. A. Larrabee, M.D., Chairman Section on Diseases of Children; C. G. Jennings, M.D., Secretary.

A paper by DR. M. P. HATFIELD, of Chicago, on *The Value of Hydrogen Dioxide in the Treatment of Children*, was read by title.

A paper by DR. D. S. BOOTH, of Sparta, Ill., on *Penal Rule in Public Schools*, was read by title.

DR. S. P. DEAHOFE, of Potsdam, O., read a paper on *Polio-myelitis Anterior Acute*, in which he related cases showing the difficulty in diagnosis often experienced, and the inutility of most forms of treatment. He had seen no benefit from electricity.

Discussed by Drs. King, of Chicago, and Peter Hooper, of Philadelphia.

DR. I. N. LOVE, of St. Louis, read a valuable paper on *One Year of Acetanilide in Pædiatric Practice*, in which he commended the remedy very highly in various febrile diseases, chorea and whooping cough, and praised the drug above antifebrin as an antipyretic and analgesic.

The paper was further discussed by Drs. Dixon, of Kentucky, Hill of New Hampshire, King, Watson, New Jersey, Atkinson, Larrabee, and Osler.

DR. J. C. WILSON'S paper on *Visceral Neuralgias in Children* was read by title.

DR WM. PERRY WATSON, of Jersey City, read a paper on *Atropin in Enuresis*. Had found usually good results from the use of the drug. He had given the remedy in thirty cases, 1 gr. to 1 oz., one drop each year.

The papers were discussed by Drs. Love, Larrabee, Knapp, of Boston, and Jeffries, of Boston.

Section of Dental and Oral Surgery.

FIRST DAY, TUESDAY, JUNE 25.

The Section was called to order by DR. E. S. TALBOT, Secretary of the Section, who announced the fact of the death of Dr. F. H. Rehwinkel, of Chillicothe, O., Chairman of the Section, which occurred on June 8, 1889.

On motion of DR. JACOB L. WILLIAMS, of Boston, Dr. W. W. Allport was elected Chairman *pro tempore*.

DR. J. S. MARSHALL, of Chicago, moved the appointment of a committee of three to draft suitable resolutions upon the death of Dr. Rehwinkel. The following committee was chosen: Dr. W. W. Allport, of Chicago, Chairman; Jacob L. Williams, of Boston; and W. X. Sudduth, of Philadelphia.

DR. W. H. ATKINSON, of New York, read a paper on *The Origin of Pus*. A *résumé* of the paper is as follows:

1. Inflammation is a disturbance of nutrition of a tissue causing a recurrence of the embryonal condition of the tissue involved.

2. The embryonal condition is established by the breaking up of the tissue into those medullary or indifferent corpuscles which at an early stage of normal development have built up the tissue.

3. The medullary corpuscles arise not only from the protoplasmic bodies of the tissue, the so-called "cells," but also the intercellular or basis substance is productive of such corpuscles, as these have shared in the formation of basis substance in the process of normal development.

4. The medullary or indifferent corpuscles will still represent a tissue so long as they remain interconnected and continuous. By a simple reappearance of basis substance the most favorable termination is established, so-called "resolution."

5. If the inflammatory or medullary corpuscles have largely augmented, a number thereby remaining in original connection, the result will be productive, viz.: with a newly formed tissue of unusual size, a so-called "hyperplasia."

6. If the inflammatory corpuscles spring from previous "cells," basis substance and blood-vessels break asunder and become isolated, they will be suspended in an albuminous liquid, they will henceforth represent pus corpuscles.

Pus, therefore, is a destroyed tissue broken up into its constituent elements, and as such unfit for production of a new tissue, although the single pus corpuscle will remain alive and amœboid almost indefinitely, as long as they are sufficiently nourished.

8. The emigration of colorless blood corpuscles certainly participates in the formation of pus and in the purulent discharge of proud flesh or granulation tissue, and is probably the main source of the pus.

9. Suppuration is caused by the presence of certain microbes, mainly the three varieties of staphylococcus, only when a previous inflammation be present in the tissue, furnishing a favorable soil for the development of the before mentioned microbes.

10. Staphylococcus is not the only antecedent of suppuration, it having been proved by experiments that the introduction of certain chemical agents unfavorable to the development of microbes may likewise be followed by suppuration.

The paper was discussed by Drs. Sudduth, Williams and Brackett.

Dr. Wm. Carr, of New York, then read a paper on *Diseases of the Antrum*, in which he refuted the statements frequently made by rhinologists that a large majority of the cases of antral diseases are caused by chronic rhinitis, polypi and other nasal diseases. The author claimed that 80 per cent. of all cases of abscess of the antrum were the result of diseases of the teeth, usually that of pericemental alveolar abscess, alveolopericementitis and necrosis. He has operated during the last eighteen months upon fourteen cases referred to him by a nose and throat specialist, of which none were caused by chronic rhinitis, none from hypertrophic rhinitis, one from dentigerous cyst, two from polypi, and eleven from diseased teeth.

The paper was discussed by Drs. Marshall, Sudduth, Atkinson, Williams, Talbot, and Brackett.

Dr. W. W. Allport, of Chicago, read a paper upon *Facial Neuralgia Associated with Pregnancy*. The author was not satisfied with any definition of the term "neuralgia" that he could find or any that he could make himself. He believed that neuralgia of the face, and especially of the teeth, was largely due, not to reflex neuroses but rather to the hyperæmic condition of the upper half of the body so constantly present during pregnancy. This hyperæmic condition is a prolific source of irritation to the nerve filaments of the mucous membrane, the skin of the face and the pulps of the teeth, and through this irritation most of the cases of neuralgia of the fifth pair of nerves had their origin.

The paper was discussed by Drs. Williams, Brackett and Atkinson.

On motion a committee on nomination of officers for the Section was appointed by the Chairman, consisting of Drs. Talbot and Marshall.

The Section adjourned to meet at 2 o'clock on Wednesday afternoon.

Second Day, June 26.

Section called to order by Dr. W. W. Allport.

The Committee on Nominations reported: For Chairman of the Section, Dr. Jacob L. Williams, of Boston; for Secretary, Dr. E. S. Talbot, of Chicago.

Dr. J. S. Marshall, of Chicago, read a paper entitled, *The Oral Cavity of Pregnant Women*. The author described the changes which take place in certain cases of pregnancy in the blood, bones, teeth, excretions and secretions. Special attention was given to the conditions of the secretions of the mouth and the diseased conditions of the mucous membrane, gums and the teeth. The author claimed that in certain cases of pregnancy nutrition was impaired and as a result the bones and the dentine became abnormally soft, and that this softening of the dentine predisposed the teeth to decay. Overwork and mental strain also rendered the teeth predisposed to caries. The acid condition of the salivary secretions augmented the action of the bacterium lactis in the production of caries.

The acids found in the mouth during pregnancy are the acetic, hydrochloric, uric and oxalic.

Lactic acid was the exciting cause of caries, as proved by Miller, of Berlin, but that he believed that the acids just named greatly augmented its action. Gingivitis and phagedenic pericementitis were often associated with pregnancy. The author called attention to the fact that in patients affected with phagedenic pericementitis there was often associated with it rheumatic affections, diabetis mellitus or albuminuria, and that during pregnancy these diseases of the mouth ran a more rapid course than in other cases. The exalted nervous state of the patient precluded severe or extended operations upon the teeth as miscarriage might be the result. Temporary fillings only should be inserted at such times.

This paper was discussed by Drs. Williams, Sudduth, and Andrews.

Dr. E. S. Talbot read a paper on *Statistics of Constitution and Developmental Irregularities of the Jaws and Teeth of Normal, Idiotic, Deaf and Dumb, Blind and Insane Persons*. He gave some of the theories which are generally held up to the present day. He then gave tables of irregularities of the teeth of healthy persons, one made by Dr. Ottofy, of Chicago, in which 317 males and 306 females were examined, showing that the largest percentages of irregularities was observed at the age of 8 years. The cuspid teeth appearing at this period was the cause, and that nature corrected most of these irregularities later in life. The author has examined the mouths of 1000 patients, showing 78 per cent. of normal cases and 22 per cent. of irregularities of the teeth. In 1,977 idiots 55.3 per cent. were normal, while 44.97 per cent. were abnormal. In 1,935 cases of deaf and dumb cases showed 45.5 per cent. normal and 54.95 per cent. irregularities.

In the examination of the mouths of the blind it was difficult to examine their mouths because of their sensitive nature. There were however enough examinations made to give a fair idea of the condition of the teeth and jaws. Out of 207 cases 50.7 cases were normal, while 49.97 cases irregularity. In 700 cases of insane cases 620 were normal and only 80 cases of irregularity. It will therefore be observed that in neurotic patients in which the disease is present at birth about one-half are afflicted with irregularities of the teeth, while in normal individuals, and also in insane cases, in which the disease is manifested after maturity, only about 20 or 25 per cent. of cases are noticed.

Third Day, June 27.

The Section was called to order at 9:30 A.M. by the Chairman, *pro tem.*, Dr. W. W. Allport.

The reading of the minutes of the previous meeting was dispensed with, and the Chairman introduced DR. W. X. SUDDUTH, of Philadelphia, who delivered a very interesting lecture upon *The Products of the Epiblast*, giving special attention to the rete malpighii as the formative layer in the development of glands, hair, teeth, nails, etc., also its relation to certain pathological conditions, such as epithelioma, carcinoma, and of the skin diseases. He laid particular stress upon the fact that the initiative step in the development of all the glands and tissues directly related with the skin was to be found in the deepest layer of the rete malpighii; which, as he plainly showed, was composed of oval and round cells, the bioplasts of Beale, and not of columnar cells as is generally understood.

The development of glands, sebaceous and sudorific, hair, and wool, the enamel organs of the teeth, etc., is the result of the evolution of a solid epithelial ingrowth which probably begins in the division of a single cell of the infant layer of the epiblast, which results in the formation of one of the above-named tissues, according to the hereditary tendency of the cell itself. The essayist dwelt on the fact that histologically it was impossible to differentiate between the several cells, as to whether they would form a hair, a gland, or the enamel organ of a tooth. They all have the same morphological appearance and give the same chemical reaction—and are also divided from the same layer of the epiblast. He held that each and every cell was a separate and individual unit, holding within itself an heredity tendency which governed the form of the resulting product. This was beautifully shown by the series of photo-micrographs, ranging from 200 to 1,250 diameters, in which the cellular structures were clearly defined—the development of a hair was followed from its incipiency to the completion of a fully formed product, also the development of a tooth. The analogous development of the two up to the time when calcification begins in the latter, was graphically portrayed. It was also shown how that a new hair was derived from an epithelial bud which was thrown off from the deepest portion of the previous hair-bulb, and also that the cord for the formation of the permanent tooth arose in a similar manner from the side of the enamel organ of the temporary tooth. The speaker also showed the special connection of the deepest layer of the epiblast in the development of epithelioma and carcinoma. He said that the whorls of epithelial cells found in the former were not necessarily pathognomonic of epithelioma, in that similar nests of epithelial cells were to be found in embryonic tissues where rapid development was in progress, and that they were indications of the latter condition only. He showed a number of nests taken from sections of embryonic tissues, which were identical in their appearance to the pearl nests found in epithelioma. In diseases of the skin he held that the deepest layer of the rete malpighii formed a very interesting field for investigation. The lecture was amply illustrated, and replete with information.

DR. ANDREWS' paper on *Pits and Fissures of the Enamel*, considered the etiology of decay at these points. He showed that pits in the enamel led to undermining decay of this tissue, and stated that these defects were more frequent than is generally supposed. These cavities, enlarging, reach the dentine, when infection and decay follows. He stated that the deep fissures in the grinding surfaces of the teeth often extended to the dentine, and that the dentine was generally defective within, the defect consisting of an interglobular formation at this point. This interglobular structure is more rapidly acted upon by the infection than is the normal tissue everywhere about it. This condition he considered largely hereditary. Exposure of the dentine is frequently caused by cracks in proximal surfaces near the neck, these being a source of infection equally with the pits and fissures of the grinding surfaces. Early infection was shown to fill the exposed tubuli with gas bubbles and granules. The gas bubbles are caused, probably, by the action of an acid on the lime cells of the dentine. This acid is given off as a waste product of the organisms. The bubbles may easily be mistaken for the organisms themselves.

The lectures were profusely illustrated by photomicrographs thrown upon the screen by the aid of the new and improved lantern of the McIntosh Battery and Optical Co. The lantern was operated by Dr. McIntosh, of Chicago.

The Committee on Resolutions on the death of Dr. F. H. Rehwinkel then reported the following resolution, which was carried:

Resolved, That the members of the Section on Dental and Oral Surgery in the American Medical Association desire to express their sorrow on the loss by death of the Chairman of this Section, Dr. F. H. Rehwinkel, of Chillicothe, O. And they would place on record their high appreciation of his character as a learned scientist and a skilful practitioner for many years, and as an honorable man in every walk of life.

On motion the Secretary was instructed to send a copy of the resolution to the family of the deceased, and that copies be sent for publication to the various dental journals of the country.

A cablegram was received from Prof. Busch, M.D., announcing the fact that a Section of *Odontology* has been organized for the Tenth International Medical Congress to be held in Berlin in 1890.

The following cablegram was ordered sent to Dr. Busch: "The Section on Dental and Oral Surgery sends congratulations for the establishment of the Dental Section, and pledges its hearty coöperation."

The Chairman's Address did not arrive as expected; it was therefore read by title and ordered printed in THE JOURNAL at the proper time.

On motion the Section adjourned.

American Ophthalmological Society.

Twenty-Fifth Annual Meeting, held at Pequot House, New London, Conn., July 17 and 18, 1889.

WEDNESDAY, MORNING SESSION.

The Society was called to order by the President, Dr. WM. F. NORRIS, of Philadelphia.

DR. CHARLES STEADMAN BULL, of New York, read a paper on

AN ANALYSES OF 90 CASES OF SIMPLE CHRONIC GLAUCOMA,

with special reference to the effects of iridectomy upon the acuity of vision and the visual field. Detailed histories of the 90 cases were presented, and the following conclusions formulated:

In endeavoring to draw some rational conclusions from the study of 90 cases, it seems wise to begin with a quotation from Priestly Smith, to whom ophthalmologists owe so much of their knowledge of the pathogeny and pathology of glaucoma.

1. In considering the expediency of an operation in chronic glaucoma, he says, "In every case of chronic glaucoma the responsibility of advising an operation is a heavy one and should on no account be undertaken without a full explanation to the patient or his friends of the almost positive certainty of blindness on the one hand, and of the uncertainties which beset the operation on the other. Having regard to the age of the patient, the impossibility of great benefit and the possibility of a painful and accelerated progress, the prudent surgeon will only operate on the express desire of the patient to receive the only chance of benefit, however small it may be." Armed with the preceding precaution, it seems to be our duty to operate in cases of chronic progressive glaucoma, and the earlier the better.

2. If the disease in a given case seems to be stationary and is still in the primary stage, and if it be possible to test the vision and the visual field at short intervals, delay in operating is permissible, but a weak solution of eserine or pilocarpine should be used daily, merely as an aid in controlling the course of the disease. The examination of these patients should be at short intervals and should invariably include tests for visual acuity and the careful examination of the visual field.

3. If the disease exists in both eyes, but with useful vision in both eyes, the eye in which the disease is the more advanced should be operated on without delay, and the surgeon will be guided in his treatment of the fellow eye by the result of the operation on the first eye.

4. To insure the best result the incision should be made well into the sclerotic with a narrow cataract knife or a broad lance knife, and the entire iris from one end of the incision to the other should be carefully torn or excised from its insertion.

5. The most carefully performed iridectomy by skillful hands is sometimes followed by rapid loss of what sight still remains, sometimes partial, but, unfortunately, sometimes total.

6. A successful result is, in the majority of cases, more likely to follow the operation if it is performed early in the course of the disease, but the maintenance of the existing degree of vision even in these cases is not invariable.

7. As regards the question of symmetry, it is probable that in the large majority of cases, probably as much as 80 per cent., the disease is sooner or later present in both eyes, and a careful study of the cases seems to establish the fact that there can be no specific interval of time which insures the second eye against an attack.

8. If the patient is old and feeble and one eye still free from disease for a year or more after the other eye has become affected, it may be considered prudent to avoid an operation on the affected eye, as it is probable that the unaffected eye may remain free during the remainder of the patient's life.

9. The condition of the field of vision is no constant guide either in forming a prognosis as to the progress of the disease or in deciding as to the time of operation.

10. The acuity of vision bears no constant relation to either the success or failure of the operation.

11. The anterior chamber is usually shallow, is occasionally entirely absent, but is often apparently normal in depth. The condition of the chamber gives no reliable hint as to the state of the vision or the visual field, nor any indication as to prognosis.

12. The appearance and motility of the iris appears to have some bearing upon the prognosis, though perhaps not to the extent believed by Nettleship. The latter states that in the cases in which the iris reacts rapidly to eserine the operation proves successful. This has not always been the experience of the reporter, but in the majority of the cases in which eserine caused rapid contraction of the pupil, the visual acuity was fairly good and the field was not seriously limited.

13. The depth of the excavation in and the color of the optic disc seem to have no close connection with the defective vision or with the limitation of the visual field, nor did they offer any

constant guide as to prognosis or to the effect of operation upon the progress of the disease.

14. The condition of the intra-ocular tension is a very uncertain guide in deciding the time for operating. It may be normal or increased, or even diminished. It does not even seem to bear any constant relation to the degree of visual acuity, or to the state of the visual field. The steady maintenance of the increased tension, however, without any diminution, almost invariably indicates the necessity for an immediate operation, and this necessity is especially indicated if the tension is continually on the increase.

15. The health and age of the patient exert a decided influence upon the effect of the operation. Any marked evidence of senility is distinctly unfavorable to operation.

DR. H. KNAPP, of New York: During the past nineteen years I have operated on 670 cases of glaucoma, 226 of which were cases of chronic glaucoma. I think that the prognosis may be a little more favorable than has been indicated by Dr. Bull. I have had four cases in which malignant disease followed operation for chronic glaucoma. I do not agree with the author as to the advisability of the continued use of pilocarpine or eserine in those chronic cases where operation seems doubtful. I advise its use when there are recurrent symptoms. In prognosis I am guided a great deal by the condition of the iris. My operations have been done with the lance-shaped knife. I consider it of great importance to carefully reduce the edges of the coloboma, not only by external pressure, but also by the use of the blunt probe. I am also careful not to make the operation too peripheric. Peripheric wounds are more liable to cystoid scars.

DR. EMIL GRUENING, of New York, read a paper on

IRIDECTOMY IN GLAUCOMA.

The speaker classified the different forms of glaucoma under the following heads: 1. Acute inflammatory; 2. Chronic inflammatory without visible degenerative changes in the iris; 3. Chronic inflammatory glaucoma with visible degenerative changes in the iris; 4. Simple glaucoma; 5. Intermittent glaucoma, and described cases illustrative of these different varieties.

DR. S. O. RICHEY, of Washington: I do not believe that simple chronic glaucoma is to be entirely a local affection. I think that it is a local expression of a cause to be looked for in the nervous system. I have used eserine with satisfaction in the early stages, but I support it by galvanism applied to the cervical ganglia. In some cases this will enable us to avoid operation.

DR. SAMUEL THEOBOLD, of Baltimore: I have met with one case in which an attack of pronounced acute glaucoma was cut short by the use of eserine.

DR. C. S. BULL, of New York: Eserine is frequently used in too strong solution. A solution of half a grain to the ounce may cause iritis after a single instillation. I never use a stronger solution than this. I often use one as weak as one-tenth of a grain to the ounce.

DR. B. ALEX. RANDALL, of Philadelphia: I can confirm the remarks in regard to the value of weak solutions. In one case of severe absolute glaucoma a solution of ⅛ grain to the ounce was entirely successful in relieving the pain. It has been used steadily for three years with no recurrence of the severe symptoms, and without the intervention of any inflammatory trouble.

DR. S. P. RISLEY, of Philadelphia: In experimenting with weak solutions of eserine, I have found that a distinct effect was experienced from a solution as weak as one-thirtieth of a grain to the ounce. If this was applied three times a day, it would in two days cause distinct browache. I have seen benefit from weak solutions where stronger solutions failed to give relief.

DR. HENRY D. NOYES, of New York: One point to which my attention was called many years ago is that in certain instances of evident glaucoma with a large amount of refractive error, it has seemed that the aggravation of the glaucomatous disease have been dependent upon the accommodative strain. In operating I have gradually withdrawn from the external peripheral place of incision. I prefer to come closer to the border of the cornea than some do. This involves less risk and is easier of performance.

DR. SAMUEL THEOBALD, of Baltimore: My experience tends to convince one that astigmatism, and particular astigmatism against the rule, is frequently the cause of glaucoma.

DR. ARTHUR MATHEWSON, of Brooklyn: In one case of glaucoma in which iridectomy had been done without asserting the progress of the disease, a large injection of strychnia caused a decided improvement of vision which continued. I have used it in other cases with good effect.

(To be concluded.)

FOREIGN CORRESPONDENCE.

LETTER FROM PARIS.

(FROM OUR REGULAR CORRESPONDENT.)

Prof. Bouchard's Mixed Method of Treating Typhoid Fever—The Pernicious Influence of Artificial Feeding on Young Children—Dr. Du Castel on the Antiseptic Treatment of Blenorrhagia—Injections of Carbolic Acid in the Treatment of Carbuncle—Soap as an Antidote for Carbolic Acid.

Professor Bouchard has a mixed method of treating typhoid which consists in the application, within certain limits, of antithermic and general antisepsy. General antisepsy is obtained by

mercurial preparations. At the onset only of the fever, during four days, the patient takes 20 pills of 2 centigrams of calomel per day. Balneotherapy is prescribed as follows: As soon as the rectal temperature passes 40° C., cold baths, to the number of eight in the twenty-four hours, should be given. These baths should maintain the body at a temperature of from 37° C. to 37.5° C. If these baths do not sufficiently lower the temperature, the sulphate of quinine should be prescribed. This medicament, according to the experiments of Chantemesse and Widal, is an excellent microbicide. The dose at the commencement should be pushed to 2 grams in the twenty-four hours. This will be gradually diminished, until a temperature of 37° C. in the morning, and 38° C. in the evening is obtained. As regards intestinal antisepsy, M. Bouchard gives the preference to naphthol A, the antiseptic power of which acts more especially on diatases or leucomaïnes, products of microbian excretions, and the toxicity of which is altogether nil, even at 5 grams per day. The following is M. Bouchard's favorite prescription: Naphthol, salicylate of bismuth, of each, 5 grams to be divided in to ten powders, one of which is to be taken every hour. According to the author, the results of this mixed treatment are most satisfactory. It responds to all the indications.

Professor Bouchard vaunts the application of naphthol in the treatment of that loathsome affection called bromhydrosis. He prescribes it in the form of a solution composed of 1 gram, 50 centigrams of naphthol, and 100 grams of alcohol. He affirms that the fœtidity of the sweating of the feet disappeared after a few applications of this solution.

The pernicious influence of artificial feeding on the health of young children, is well known. A statistical report, published in Berlin by M. Richard Bœckh, and which formed the subject of a report by M. J. Bertillon to the Society of Public Medicine, shows that the mortality of infants brought up by the bottle is six or seven times higher (all things being otherwise equal) than that of those nourished by their mother's breast.

This statistic proves that neither the age of the children, nor their legitimate or illegitimate connection, nor the easy circumstances of their parents could explain the difference between the mortality of infants brought up by their mother's breast, and that of those brought up by the bottle. The considerable difference between the two categories of infants (7 and 45 per 1,000 living of each category), is entirely due to the difference of alimentation. It proves also that if the mortality of illegitimate children, at Berlin, is in general double that of legitimate children, it is owing to the fact that the illegitimate children are, more often than the legitimate children, brought up by the bottle.

The opinions of Dr. Du Castel as expressed in a note read before the Société de Médecine Pratique on the antiseptic treatment of blenorrhagia may be resumed as follows: Antisepsy has always for result the maintenance of the urethra in this state of asepsy, which modern medicine seeks to obtain in every cavity which suppurates, as favorable to the cure of suppuration. In a certain number of cases, the antiseptic treatment produces a cure remarkably rapid. It is only in exceptional cases that antisepsy well conducted does not produce a prompt improvement of the inflammatory accidents, and a shorter duration of the acute stage. Antisepsy, practiced early, diminishes the chances of the propagation of the blenorrhagia to the posterior part of the urethra, and renders vesical, prostatic and testicular complications more rare. The following are the antiseptic agents employed in these cases: 1. The sulphate of quinine at 1 per cent., the permanganate of potash at $\frac{1}{2000}$, the bichloride of mercury at $\frac{1}{20000}$, and the biniodide of mercury at $\frac{1}{20000}$ may be utilized, in the form of injections, in the treatment of acute blennorhagic urethritis, and applied at the commencement of the malady. Momentary contraindications may be met with only in cases of local complications. 2. These agents, which, of themselves, constitute the whole treatment, are superior to balsamic remedies and to all of the procedures of the classical method, as regards rapidity and innocuousness of effects. 3. The preference should be accorded to the bichloride, and perhaps to the biniodide of mercury, the value of which can only be settled by experience.

MM. Arnozan and Lande have cited in the *Journal de Médecine de Bordeaux*, two cases in which injections of carbolic acid had given them very remarkable results in the treatment of carbuncle. In one case in particular, in a woman æt. 65 years, affected with an enormous carbuncle in the back, and the patient appearing to be in a hopeless condition, the authors injected into the cellular tissue of the periphery of the zone inflamed 5 grams of a solution composed as follows: Glycerine, distilled water, of each 15 grams, crystallized carbolic acid 3 grams. These injections were made in five points circumscribing the inflamed region. They represented a total dose of 50 centigrams of pure carbolic acid. The pain caused by the first injection was very violent, but in the evening this subsided, and an evident amelioration was produced. On the evening of the next day, a fresh injection of 30 centigrams only, on three points was made. On the third day, 20 centigrams were injected. On the fourth, fifth and sixth day 10 centigrams were injected. From this moment convalescence commenced and progressed regularly. This case is interesting in more than one point of view. The patient was in a hopeless state when the subcutaneous injec-

tions of carbolic acid were practiced, and it was remarkable to see the rapidity with which the accidents had disappeared. Twenty-four hours after the first injections, the amelioration was notable, twenty-four hours later, the cure of the patient was ensured. The dose at which the carbolic acid was employed equally deserves attention, for, notwithstanding the high dose of 50 centigrams, the phenomena of intoxication which followed, were almost nil. The authors conclude that this case is sufficiently encouraging to render surgeons less timid in the therapeutic applications of carbolic acid, and authorizes, in case of urgency, an energetic intervention.

The *Moniteur Thérapeutique* relates that ordinary soap, or indeed, any soap, is the best antidote for carbolic acid. It must be administered immediately after intoxication, and frequently repeated, until the disappearance of all the toxic phenomena. A. B.

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Dr. Roger S. Tracy's Report to the Board of Health on the Mortality of the City—The Board disseminating among the People a knowledge of the Contagiousness of Tuberculosis.

A preliminary report in relation to the mortality in this city for the year 1888, recently presented to the Board of Health by Dr. Roger S. Tracy, Assistant Sanitary Superintendent, has attracted considerable attention on account of the somewhat surprising deductions which he makes from the results of his investigations. These are as follows: "The death-rate in tenement houses is less than the general death-rate of the city. The death-rate in the large tenement houses is less than in the smaller ones. That while diarrhœal diseases and diphtheria show a greater death-rate in the larger houses (leaving out the suburban districts, where the conditions are very different), phthisis and pneumonia show comparatively little difference; that difference, however, being in favor of the larger houses. The greatest general death-rate among persons over 5 years of age, the next to the highest death-rate from diarrhœal diseases and pneumonia, and markedly the highest from phthisis, are in the district south of Fourteenth Street and west of Broadway. The excessive mortality in this part of the city is probably connected with the great number of old houses and the dampness of the soil. These results are much at variance with what was expected. It seems to be sufficiently established that people do not live under such extremely bad sanitary conditions in the tenements as they have been supposed to." The figures which he presents show that while in 1869 the general death-rate was 28.13 and the tenement death-rate 28.35, in 1888 the general death-rate was 26.33 and the tenement death-rate only 22.71.

The way in which Dr. Tracy reaches his conclusions is somewhat as follows: Last year the sanitary police took a census of the tenement house population of the city. The general death-rate, in the estimated population, as just stated, was 26.33, and the fact that the highest death-rate in the tenement house population is only 26, and the general tenement house death-rate being 22.71, would at first seem to indicate that the population of the city has been underestimated and the quoted death-rate is too high, or that all the deaths belonging in tenement houses had not been credited to them; or else that the death-rate is actually lower for the tenement house population than for the rest of the city. It might be that deaths which should have been credited to these tenement houses have not been so credited. The total number of deaths in institutions was 7,774; of this number the former place of residence was ascertained in 3,444 instances, and these deaths have all been credited to the houses in which they had lived. It is evident that the remaining deaths, 4,330, ought not to be credited solely to the tenement houses, as many of them are from out of town, many from boarding-houses and private dwellings, many are immigrants just arrived, and many are old people in homes and almshouses, or infants in foundling or lying-in asylums. It is a fair conclusion, therefore, that the death-rate of the tenement house population is lower than that of the remaining population.

It would seem, then, according to Dr. Tracy, that, so far as the risk of death in New York is concerned, it is better to live in a crowded tenement house than in a brown-stone mansion on Fifth Avenue. It is probable, however, that the greater part of the tenement population, if offered the opportunity, would prefer to take their chances in the Fifth Avenue mansion. There can be little doubt that some mistake has been made in estimating the existing conditions, and that the conclusion mentioned is not justified by the real facts of the case. In commenting on Dr. Tracy's statistics the *New York Medical Journal* says the tenement house death-rate is perhaps given so low because of the inordinately high estimated tenement population; and, of course, the higher the error in an estimated population, the lower must the rate of mortality fall. In the statistics given the total population of the city is placed at 1,526,081, and the tenement population at 1,093,701 in 1888, while in 1869 the total population is placed at 894,419, and the tenement population at 468,493; showing an increase of 625,209 in the tenement population in twenty years. "In other words, if Dr. Tracy's figures are correct," says the *Journal*, "the increase has been almost wholly

in the tenements; the private house classes have grown only 6,453 in twenty years, or only 323 per annum. This is incredible; there have been thousands of houses put up in that time, to say nothing of the great number of beings that fill them. The better, or well-to-do, class, has not been stationary. Stated proportionally, according to Dr. Tracy's data, the rate of increase has been over 133 per cent. in the one class and less than 1.5 per cent. in the other. If our point is well taken, it must be seen that a good deal of what Dr. Tracy says goes for nothing."

It is a fact that when there has been continuous hot weather for a number of days the mortality in New York often mounts up from 600 or 800 to over 1,000 deaths a week, and this increase is almost entirely in the tenement house population, being due to diarrhœal disease in infants and young children. A reporter of one of our most reliable papers recently accompanied one of the summer corps of the Board of Health's visiting physicians in his house to house inspection in a down-town tenement district; and this is what he saw: "The street was filthy, a fact that the housewives along the thoroughfare attributed to itinerant peddlers of fish and fruit, whom they charged with hiding their refuse stuff in ash barrels. But whatever was the cause, there was engendered a nauseating stench that came up in volumes under the scorching heat of the sun. But filthy and foul-smelling as the streets are, the habitations are more intolerable in both respects. The floors of the dark hallways are covered with dirt, while the walls are grimy with dust and smoke. In these pig-pen alleys half naked children that look as though they had never had a bath in all their lives play together in a half-hearted way, without laughter and almost without smiles. They do not seem to have enough life in their pale little bodies to get up a healthy romp, if such a thing were possible in such an atmosphere. Each of these tenements has a housekeeper, who is generally unclean, unkempt and slovenly. The other women in these houses are usually of the same description as the housekeeper. They seem to have an antipathy to water in any form, and spend much of their time hanging about the doors and gossiping. The rooms in which many of these people sleep beggar description. They are small, badly ventilated, and filled with stifling, foul odors; and what makes it worse is that the apartments are overcrowded to an extent that indicates a great mortality in the event of a contagious disease breaking out." Any one at all familiar with New York tenement house life will acknowledge the correctness of this picture as applied to many districts of the city.

It is a fact, however, that during the last few years much has been done to ameliorate the condition of the poor, and especially to save the lives of the children; and there can be little doubt that the death-rate among the tenement population has been materially diminished. Each year the Children's Aid Society and the St. John's Guild care for many thousand children, and numerous summer homes among the churches provide fresh air and country pleasures for the poor; while many lives are saved by the summer visiting corps of the Board of Health.

The Board of Health has been doing a very good work in disseminating among the people a knowledge of the contagiousness of tuberculosis and the simplest and most efficient means for the prevention of its spread. In June an able report on this subject was submitted to the Board by the pathologists, Drs. T. M. Prudden, H. M. Briggs and H. P. Loomis, and more recently ten thousand copies of a set of rules to be observed for the prevention of the spread of consumption have been printed for distribution. As this is probably the first instance in which any regulations regarding this disease have been promulgated by the public sanitary authorities, it may be of interest to append them.

1. Do not permit persons suspected to have consumption to spit on the floor or on cloths unless the latter be immediately burned. The spittle of such persons should be caught in earthen or glass dishes containing the following solution: Corrosive sublimate 1 part, water 1,000 parts.

2. Do not sleep in a room occupied by a person suspected of having consumption. The living rooms of a consumptive patient should have as little furniture as practicable. Hangings should be especially avoided. The use of carpets, rugs, etc., ought always to be avoided.

3. Do not fail to wash thoroughly the eating utensils of a person suspected of having consumption as soon after eating as possible, using boiling water for the purpose.

4. Do not mingle the unwashed clothing of consumptive patients with similar clothing of other persons.

5. Do not fail to catch the bowel discharges of consumptive patients with diarrhœa in a vessel containing corrosive sublimate 1 part, water 1,000 parts.

6. Do not fail to consult the family physician regarding the social relations of persons suffering from suspected consumption.

7. Do not permit mothers suspected of having consumption to nurse their offspring.

8. Household pets (animals or birds) are quite susceptible to tuberculosis; therefore do not expose them to persons afflicted with consumption; also do not keep, but destroy at once, all household pets suspected of having consumption; otherwise they may give it to human beings.

9. Do not fail to thoroughly cleanse the floors, walls and ceilings of the living and sleeping rooms of persons suffering from consumption at least once in two weeks.

P. B. P.

Expenses of Officers of Sections.

Mr. Editor:—The following letter is one of several, of similar import, that I have received during the last six weeks:

"N. S. DAVIS, M.D.

Dear Doctor:—How are the necessary expenses of the various Sections—expenses for stationery, etc.—to be met? I hope arrangements will be made for meeting them out of THE JOURNAL fund of the Association. The Secretaries of Sections have already been put to a large expense for printing, correspondence, etc.

Yours truly,

A. B., Secretary of Section."

Some of these letters came to hand a little before the meeting at Newport, when I was too much occupied to take time to examine closely the Constitution and By-laws relating to the subject, and gave for answer, that if no provision already existed for meeting the necessary expenses of the Secretaries of the Sections in executing their official correspondence, the defect could be remedied by proper action of the Association while in session at Newport.

As no action was taken upon the subject at the recent meeting, and the above letter has reached me since, I think it proper to call attention to the following clause of the Constitution [Section VI. Funds and Appropriations], "The funds may be appropriated for defraying the expenses of the Annual Meetings, including the necessary expenses of the Permanent Secretary in maintaining the necessary correspondence of the Association; for publication; for enabling the *Standing Committees* to fulfil their respective duties, *conduct their correspondence*, and procure the materials necessary for the completion of their stated annual reports," etc.

This has constituted a part of the Constitution since the adoption of that instrument, in 1847, and for the first thirteen years all the scientific and professional work of the Association was done by *Standing Committees* on Medical Education, Medical Literature, Practical Medicine, Surgery, Obstetrics, Epidemics and Hygiene, etc., and it plainly provided for defraying the expenses incurred by such committees in conducting their necessary correspondence. When, in 1860, all the work of these committees was transferred to the several *Sections*, this provision of the Constitution certainly became as applicable for the payment of the necessary expenses of the Secretaries in conducting the proper correspondence of the Sections, as it had previously been to that of the Standing Committees.

It would be necessary for the Secretary of the Section to keep an accurate account of such expenses and to render a bill of items to the Treasurer of the Association, which when paid would remain as a proper voucher in his hands.

Yours truly,

N. S. DAVIS.

Chicago, Ill., July 29, 1889.

BOOK REVIEWS.

MATERIA MEDICA AND THERAPEUTICS, FOR PHYSICIANS AND STUDENTS. By JOHN B. BIDDLE, M.D., late Professor of Materia Medica and General Therapeutics in the Jefferson Medical College, Philadelphia. Eleventh Edition, Revised and Enlarged, with Special Reference to Therapeutics and to the Physiological Action of Medicines. By CLEMENT BIDDLE, M.D., U. S. N., and HENRY MORRIS, M.D., Fellow College of Physicians of Philadelphia, etc. Philadelphia: P. Blakiston, Son & Co., 1889. Pp. xix–607. Price, $4.25.

The changes which are constantly being made in Materia Medica by the introduction of new remedies and the abandonment, partial or entire, of others, necessitates frequent revisions of the standard works of this class of books. When these are of a voluminous and exhaustive character the purchase of revised editions is often a matter of very considerable expense; but there are, fortunately, less pretentious works which serve an admirable purpose while recommending themselves to the physician, by reason of their comparative inexpensiveness. The present edition of Biddle's well-known treatise is of such a character. It is a well balanced book and is thoroughly modern. Shorn of all that is redundant in the way of botanical descriptions and explanations of pharmaceutical and chemical preparations, and presenting concise accounts of the principal physiological actions of the remedies described, it affords one most valuable and entertaining reading. It does not, of course, take the place of the cyclopædic treatises on materia medica which aim at giving complete accounts of the multitudinous experiments which have been conducted with painstaking care in the various countries of the world; it does not even tell us much of what can not be accomplished by remedies; but it does give, in concise form, the principal physiological actions and therapeutical applications of the more valuable remedies at our command. Among the newer remedies introduced in this edition we find hypnone, urethan, papaya, adonidine, strophanthus, sparteine, morrhuol, iodol, lanolin and saccharin; while a new chapter has been added on the subject of antipyretics, in which the phenyl derivatives, such as acetanilide, resorcin, hydroquinine, pyrocatechin, salol, naphthaline, pyridine, kairine, thalline, antipyrin, etc., have been well treated.

PAPERS READ BEFORE THE MEDICO-LEGAL SOCIETY OF NEW YORK. Third Edition (First Series). New York: Medico-Legal Journal Association. 1889.

Casper's great work on forensic medicine is to be found in the libraries of most of those who

profess any extensive knowledge of this department. Notwithstanding its author has been dead for more than twenty-five years, age appears not to have made it the less valuable. But it is not given to all branches of science to grow old so slowly, and the wisdom of the Medico-Legal Society, of New York, in reprinting all the papers which have been read before it, is apparent. The present volume, or first series, includes papers read in the years 1868–'69–'70 and '71. In Dr. Jas. J. O'Dea's essay regarding "The Sphere, Rights and Obligations of Medical Experts," he says: "Next to slander, unreasonable expectation is the greatest foe to character." If physicians acted wisely they would insist upon drawing a sharp line of distinction between the medical witness and the medical-expert witness. Expert testimony begins where ordinary testimony ends. The expert witness does more than bear testimony to facts, he delivers opinions not only on what he himself has observed, but also on what ordinary witnesses have stated under oath.

The observation of facts, listening to their recital, weighing and classifying them after due examination, and so finally rising to a conception of the general principle of which they are the expression, constitutes the task of an expert witness. Stating this conception in appropriate language is the delivery of an opinion. According to Plato, an opinion is at best but a mean between knowledge and ignorance; and the more generally it is understood in this light, the better it would seem to be for all.

To prevent experts from usurping a power which they might be tempted to use for the benefit solely of the party calling them, it is suggested as the proper remedy that the court alone should call and examine medical experts. The author's view in this respect is supported by Prof. Ordronaux. Under the usual methods the expert is practically pledged to support the side that calls him, or if not, the council will lead or force from him an opinion in the desired direction, using all his skill to bend it to the cause for which he contends, or failing, will beat down or belittle it in the estimation of the jury. Would it be possible to reach a rational or honest opinion under such circumstances, when an opinion is at most but an approximation to the truth, often not far removed from ignorance, and should never be ventured except the opportunity be given to arrive at it in a way that is intellectually honest.

A Guide to Therapeutics and Materia Medica. By Robert Farquharson, M.P., M.D., Edinb. Fourth American, from the Fourth English, Edition. Enlarged so as to include all preparations officinal in the U. S. Pharmacopœia, by Frank Woodbury, A.M., M.D. Philadelphia: Lea Brothers & Co. 1889.

This work, well known to students and practitioners, preserves the same form which has characterized it in its former editions, although it has been practically rewritten and very considerably enlarged. In the hands of its author it has been made to accord with the British Pharmacopœia of 1885. There have been seventeen omissions, and the author would gladly have excluded a greater number of useless articles which still receive official sanction. There have been 113 primary articles and their preparations added. The terminations of the names of alkaloids has been made uniform by adopting the English *-ine* and Latin *-ina*, *i. e.*, codeine and codeina. Both the metric and apothecaries' systems are used side by side throughout the book.

The American editor has added some sixty pages at the end of the volume, including a few new non-officinal preparations and an Epitome of the National Formulary issued by the Committee of the American Pharmaceutical Association. The reader will look in vain for such substances as antifebrin, strophanthus, peroxide of hydrogen, salol, lanolin, naphthol, sulphonal, saccharin, and others. However, this work has made its reputation, and will hold it. It may have been prudent to leave out many of the drugs now under investigation, but we usually look for new light upon them when a new book or a new edition of an old one appears.

Synopsis of Human Anatomy. Physicians' and Students' Ready Reference Series. By Jas. K. Young, M.D. Philadelphia and London. F. A. Davis, publisher. 1889.

This volume is one of a series, future volumes of which are to appear from time to time. The author states in the preface the object of the work, which it would seem is intended to fill a want rather more extensive than its title and character justify.

We hope that students will not depend for their knowledge of anatomy upon any synopsis of the subject; it would be a retrogressive step anything but desirable. Anatomy is a science, and the presentation of its bare outlines serves only to detract from it as such. A student who has a true scientific spirit would never be satisfied with any short or condensed presentation of this most important subject. It is unfortunate indeed for the science of anatomy that it tempts men to present it in this way. As a Synopsis of Anatomy the book is accurate and excellent, but as a substitute in the schools for other and larger works, we cannot recommend it; as a short-cut for the acquirement of a broad science we deprecate it. It may facilitate the already too rapid mode of acquiring a knowledge sufficient to pass an examination, and there are many who, not being in hearty sympathy with the scientific spirit of the profession they study, are glad to avail themselves of abridged volumes, even though

they lack the life and inspiration which no true science ever wants, and which its devotees must and always will find in it. As a work of ready reference its value depends upon its accuracy, completeness and the excellence of its arrangement; we do not hesitate to commend these.

MISCELLANY.

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.—At a meeting of the Committee, held at Pittsburgh, July 15, the following resolutions were adopted:

WHEREAS, The annual meeting of the Medical Society of the State of Pennsylvania, which convened at Pittsburgh, June 4, 1889, was adjourned until the first Tuesday of the following September, by reason of the distress and confusion caused by the flood in the Conemaugh Valley; and

WHEREAS, It is the opinion of many prominent members of the Society that a successful meeting of the Society cannot be held during the present calendar year, for many reasons, the chief of which is, that the sorrow and suffering caused by the recent great calamity still oppresses the entire community to such an extent as to infere with an early meeting; therefore, be it

Resolved, That the meeting of the Medical Society of the State of Pennsylvania, which was adjourned to meet September 3, 1889, be still further adjourned until the second Tuesday of June, 1890.

AN IMPORTANT DECISION.—In the case of the People vs. Blue Mountain Joe, the Supreme Court of Illinois held that section 11 of the Medical Practice Act, which prohibits itinerant venders of medicines, nostrums, etc., from operating in the State, to be valid. The point was raised in the present case that this section was not covered by the title of the Act, and therefore invalid. The last General Assembly attempted to repeal the Act, it being thought invalid, but this decision sustains the Act in every particular.

THE BRAINARD DISTRICT MEDICAL SOCIETY, of Central Illinois, met at Delavan, Ill., July 25. An interesting meeting was held. The leading paper presented was on the "Etiology of Tubercular and Scrofulous Disease," by the President, Dr. S. T. Hurst, of Greenview. Drs. N. Holmes and A. G. Servoss were appointed essayists for the October meeting, with the topics "Hysteria" and "Intermittent Fever" respectively.

ENCOURAGING SCIENCE.—The Vermont Microscopical Association has just announced that a prize of $250, given by the Wells & Richardson Co., the well-known chemists, will be paid to the first discoverer of a new disease germ. The wonderful discovery by Prof. Koch of the cholera germ, the cause of cholera, stimulated great research throughout the world, and it is believed this liberal prize, offered by a house of such standing, will greatly assist in the detection of microörganisms that are the direct cause of disease and death. All who are interested in the subject and the conditions of this prize, should write to C. Smith Boynton, M.D., Secretary of the Association, Burlington, Vt.

BOOKS RECEIVED.

Book on The Physician Himself, and things that concern his Reputation and Success. By D. W. Cathell, M.D., Baltimore, Md. Philadelphia: F. A. Davis. 1889.

Transactions of the Southern Surgical and Gynecological Association. Vol. I. Session of 1888. Birmingham, Ala.: Caldwell Printing Co.

PAMPHLETS RECEIVED.

A Year's Record of Seventy-five Successful Cases of Abdominal Section. By B. Curtis Miller, M.D., Charleston, W.Va. (Reprint.)

Physiological Basis of Objective Teaching. By Marshall Calkins, A.M., M.D., Springfield, Mass.

Two Suggestions for Improving the Operation of Excision of the Knee-joint for Strumous Disease. By A. G. Miller, M.D., F.R.C.S., Ed., Edinburgh, Scotland. (Reprint.)

Twelfth Report of the State Board of Health of Wisconsin for 1888.

LETTERS RECEIVED.

Dr. N. O Lane, North St. Paul, Minn.; Dr. S. N. Sims, St. Joseph, Mo.; Gladstone Lamp Co., New York; G. & C. Merriam & Co., Springfield, Mass.; Dr. D. B. Wise, Mt. Eaton, O.; I. Halderstein, New York; Dr. A. L. Hummell, Philadelphia; Druggist's Circular, New York; Dr. J. B. Roberts, Philadelphia; Dr. Herbert Judd, Galesburg, Ill.; Dr. T. D. Crothers, Hartford, Conn.; Dr. J. A. Blanchard, Umatilla, Fla.; Dr. J. Barton Hopkins, Philadelphia; Dr. Robt. Newman, New York; Dr. W. B. Atkinson, Philadelphia; The Levitype Co., Chicago; Dr. L. Elliot, Washington; Dr. S. M. Horton, Fort Adams, R.I.; Dr. W. B. Hopkins, Philadelphia; Dr. Walter Channing, Brookline, Mass.; Battle & Co., St. Louis; Dr. K. Meller, Lincoln, Neb.; Dr. A. F. Brock, St. Louis; Dr. C. S. Wood, New York; Dr. McPheron, New York; The Analyst Publishing Co., New York; Dr. J. F. Jenkins, Tecumseh, Mich.; Dr. Dewees, Salina, Kan.; Dr. J. V. Shoemaker, Philadelphia; Dr. J. B. Ingals, Meriden, Ia.; Dr. Harold N. Moyer, Chicago; Dr. Henry O. Marcy, Boston; Witthoff, Marsilly & Co., New York; Dr. Thomas L. Bennett, Kansas City, Mo.; Dr. William Carroll, New York; Gustave E. Stechert, New York; Dr. Henry Smith, Philadelphia; Dr. J. L. Bland, Houma, La.; Dr. E. S. Elder, Indianapolis, Ind.; The Provident Chemical Works, St. Louis; Dauchy & Co., New York; Rees Printing Co., Omaha, Neb., Dr. H. H. Powell, Cleveland, O.; Dr. L. S. Trowbridge, Detroit, Mich.; Fred. C. Van Horen, New York; Dr. N. S. Watson, Matteawan, N. Y.; Dr. J. M. Emmert, Atlantic, Ia.; Dr. C. W. Richards, Washington; Dr. A. F. A. King, Washington; Dr. Joseph E. Root, Harford, Conn.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from July 27, 1889, to August 2, 1889.

Capt. William R. Hall, Asst. Surgeon, is granted leave of absence for ten days. Par. 5, S. O. 80, Hdqrs. Dept. of Dak., July 27, 1889.

Capt. Samuel Q. Robinson, Asst. Surgeon U. S. Army, leave of absence for two weeks granted by par. 11, S. O. 165, from these hdqrs., is hereby extended ten days. Par. 8, S. O. 172, Hdqrs. Div. Atlantic, July 30, 1889.

By direction of the Secretary of War, so much of par. 1, S. O. 159, A. G. O., July 12, 1889, as directs Capt. Louis Brechemin, Asst. Surgeon, to return to his station at the close of the encampment of the Illinois National Guards, is amended to direct him to report in person not later than August 20, 1889, at Ft. Robinson, Neb., for duty at that place. S. O. 174, Hdqrs. of the Army, Adjutant General's Office, Washington, July 30, 1889.

First Lieut. Robert R. Ball, Asst. Surgeon, extension of leave of absence granted in S. O. 167, July 22, 1889, from this office, is further extended ten days. Par. 23, S. O. 169, A. G. O., Washington, July 24, 1889.

First Lieut. H. S. T. Harris, leave of absence granted in S. O. 140, A. G. O., June 18, is further extended two months. Par. 9, S. O. 176, A. G. O., August 1, 1889.